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THE SCIENTIFIC ASPECT OF MODERN MEDICINE.*

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THE origin and development of medical science are contemporaneous with the origin and development of mankind. So long as man has been, so long has been disease; and whenever man has suffered, man has tried to heal. The foundations of medicine lie deep in that soil of common knowledge from which arose all the sciences, and throughout its history it has freely absorbed the discoveries of them all. From the first it has been, and it must ever remain, their common meeting-place. In proportion as its spirit and its methods have been scientific it has progressed toward ultimate perfection. Yet, notwithstanding the importance of science to medicine, from first to last medicine has been permeated by the pernicious influence of empiricism. A wise man once said that all true science begins with empiricism, and medical science is a striking example of this fact. But it made an early effort to free itself. The most brilliant epoch of Grecian history is marked no more immortally by the wisdom of Socrates, the histories of Herodotus, the tragedies of Æschylus, and the art of Phidias, than by the medicine of Hippocrates and his followers, for this represents the first recorded endeavor—and a mighty endeavor it was—to break away from the empiricism of the earlier ages. But the science of the time was meagre, and, however laudable the aim, the Hippocratic writings are full of empirical notions. From that time on, down through the ages, we find science and empiricism, like the good and bad principles in all nature and all religions, ever contending. And the struggle still continues. As Richard Hooker wrote more than 300 years ago, so to-day do "Empirics learn physic by killing of the sick." The empiricism of to-day is not solely the method of osteopaths, Christian Scientists, and vendors of patent nostrums; it is found in the schools and the practice of legitimate medicine. At times it has surprising successes; but the struggle is an unequal one, and science is sure to be victorious. At no period of the world's history has the scientific idea in medicine been so aggressive and advanced so rapidly as during the past fifty years, and at no time has it seemed nearer its ultimate victory than at this beginning of the twentieth century. This advance is so striking and so full of general interest that I have ventured to choose

it as my subject to-day, under the title of "The Scientific Aspect of Modern Medicine."

The Idea of a Vital Force.—One of the most essential prerequisites of this advance was the complete and final liberation of medical science, and of all those sciences now comprehended under the general title of biology, from a burden which in one form or another had hampered progress from the earliest times. I mean the conception that living bodies possess within themselves an active force or principle, differing in nature from anything possessed by non-living bodies, and which represents the vitality of living things. The beginnings of this idea are found in the various forms of animism of savage races, according to which a spirit or ghost inhabits the body and is responsible for its actions. In diseased states, this good spirit is dispossessed by an evil one. In one form or another this belief is met with among all civilized people. It is found in the days of Salem witchcraft, and even as late as 1788, in Bristol, England, when seven devils were exorcised from an epileptic. In physiology, from the times of the early Greek medicine until after the Renaissance, the animistic idea is represented by the doctrine of the *pneuma* or the "spirits." In Hippocratic times the spirits entered the body through the lungs, were carried by the blood to all parts, and enabled the vital actions to take place. At about 300 B.C. the Alexandrians found it convenient to make use of two forms of this mysterious agent, the "vital spirits" residing in the heart, and the "animal spirits" in the brain. To these, in the second century of the Christian era, Galen added a third, the "natural spirits," located in the liver.

All physicians of the present day are familiar with the remarkable story of Galen and his long reign in medicine. Born in the time of the emperor Hadrian, he lived an active life of medical research and practice. He was the imperial physician of Rome, and while the wise Marcus Aurelius was writing his "Meditations," Galen was producing his numerous medical books. These covered the whole field of the medicine of his time, much of which was the direct result of his own investigations. His activity was unparalleled, his knowledge immense, his logic and literary skill pronounced, and his system of medicine all embracing. In these respects he was far above his contemporaries, and with the decline of the Roman civilization, the consequent disappearance of originality of thought, and the long unbroken sleep of research, what wonder is it that his brilliance should shine unrivaled through the dark ages?

For more than a thousand years following the death of Galen, his authority in all things medical was supreme, and the doctrine of the *pneuma* was

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unchallenged. Only when there came the intellectual awakening of the Renaissance, did men ask themselves whether Galen's books or the human body more nearly represented the truth. But it was even long after this that the *pneuma* was deposited, and when it fell it was only to give place to the *archeus* of that arch-charlatan, Paracelsus, and to the *anima sensitiva* of the mystic philosopher, Van Helmont, and the melancholy pietist, Stahl. Through the latter part of the eighteenth and the early part of the nineteenth century, the vital principle was still in control of the physiologists; but, as they learned more of the conservation and the transformation of energy in inanimate things, and more of the working of living bodies, the gulf between the inanimate and the animate gradually narrowed, and the supremacy of the laws of chemistry and physics in all things living became clearly recognized. It is true that at times in these latter days, sporadic upshoots of a neo-vitalism raise their tiny heads, but these are to be ascribed to the innate aversion of the human mind to confess its ignorance of what it really does not know, and they do not receive serious attention from the more hopeful seekers after truth.

The elimination from scientific conceptions of the idea of vital force made possible a rational development of the science of physiology, and in this way led directly to the growth of a scientific medicine. In one of his luminous essays, Huxley has written: "A scorner of physic once said that nature and disease may be compared to two men fighting, the doctor to a blind man with a club, who strikes into the *melée*, sometimes hitting the disease and sometimes hitting nature."

The interloper "had better not meddle at all, until his eyes are opened—until he can see the exact position of his antagonists, and make sure of the effect of his blows. But that which it behooves the physician to see, not, indeed, with his bodily eye, but with clear intellectual vision, is a process, and the chain of causation involved in that process. Disease . . . is a perturbation of the normal activities of a living body, and it is, and must remain, unintelligible, so long as we are ignorant of the nature of these normal activities. In other words, there could be no real science of pathology until the science of physiology had reached a degree of perfection unattained, and indeed unattainable, until quite recent times."

No period has been so rich in physiological discoveries as the last 50 years of the nineteenth century. Research has developed along two main lines, the physical and the chemical, and to-day physiology is rightly regarded as the foundation stone of the science of diseases, and thus as the basis of scientific treatment.

The Cell Doctrine.—At the time when vital force was having its death struggle, the cell doctrine was being born. Inseparably linked with the idea of the cell is the idea of protoplasm—protoplasm the living substance, the cell the morphological unit. The heretofore mysterious living body is a complex mass of minute living par-

ticles, and the life of the individual is the composite life of those particles.

Within the past few weeks the world has bowed in mourning over the bier of an aged man, who, more than 40 years ago, in the strength of his vigorous manhood, gave to medical science in a well-rounded form the best of the cell doctrine of his time. Rudolf Virchow need have performed no other service than this to have secured worthy rank among the great men of medicine of the nineteenth century, for few books exercised a greater influence over medicine during that period than his "Cellular Pathology." From ancient times physicians had been divided into many camps regarding the causes of disease. One idea had been prominent for more than twenty centuries: The humoralists had maintained that pathological phenomena were due to the improper behaviour or admixture of the liquids of the body, which were, in the original form of this theory, the four humours: blood, phlegm, yellow bile and black bile. According to the solidists, on the other hand, the offending agents were not the liquids but the solids, and especially the nervous tissues. Both humoralists and solidists were excessively speculative, and the growing scientific spirit of the nineteenth century was becoming impatient of hypotheses that could not be experimentally proved. The times were ripe for new ideas. Virchow, soon after taking the Professor's chair at Berlin which he held from 1856 until his death, gave to an audience largely composed of medical practitioners, the lectures which, more than all else, have made him famous among his professional brethren. His main thesis was the cellular nature of all the structures and processes, whether normal or pathological, of all organized beings, and his dictum, "*omnis cellula e cellula*"—a cell arises only from an already existing cell, is the keynote of his theories. With his microscope he demonstrated the cells in all the tissues of the body, whether normal or pathological, and he proved the origin of the morbid cells in the normal ones. As to processes, he maintained rightly that all parts of the body are irritable, that every vital action is the result of a stimulus acting upon an irritable part, and he claimed a complete analogy between physiological and pathological processes. Every morbid structure and every morbid process has its normal prototype.

Virchow's ideas aroused enthusiasm the world over, and were eagerly studied and largely accepted by progressive men of medicine. Time and research have corrected errors of detail, but no one now denies the cellular nature and physiological basis of pathological phenomena. These facts are fundamental to the understanding and treatment of disease, which is now universally regarded as the behavior of the body cells under the influence of an injurious environment.

Virchow's ideas regarding pathological formations are a fitting complement to the laws of the conservation and transformation of energy. In the living world, as in the non-living, the law of

continuity holds good. There are no cataclysms, there is no new creation. Structure and energy, whether normal or abnormal, proceed from pre-existing structure and energy. Only such a conception can make possible a scientific medicine, and, since its promulgation, medical advance has been rapid.

The Rise of Bacteriology.—During the last half century, and largely during the past 25 years, that is, during the lifetime of this university, there has grown up a totally new science, comprising a vast literature and a vast subject matter, though dealing with the most minute of living things. This is the science of bacteriology. The achievements in this field have surpassed all others in their striking and revolutionary character, and bear both on the conception of the nature of a very large number of diseases, hitherto puzzling human understanding, and on their prevention and cure, hitherto baffling human skill. All other human deaths are few in number in comparison with those that have been caused by the infectious diseases. Occurring the world over, constantly with us, invading all homes, and keeping the death rate in cities perpetually high, at times they have swept, with the fury of a fiery volcanic blast, over large regions of the earth's surface, sparing few, and leaving in their train empty households and cities of death. Recent statistics have claimed that one of these diseases, tuberculosis, alone kills one-seventh of all the population of the world.

To what are these pestilential visitations due? Many have said, "To the anger of offended gods;" others, "To the displeasure of a divine Providence;" the early physicians, "To a wrong admixture of the humors;" the later pathologists, "To mysterious fermentations." But none of these answers has touched the vital point. This was reserved for a simple, modest and earnest student of science, of humble origin, the son of a French tanner, a man unhampered by medical tradition, seeking only the truth, and possessed of no genius except the genius of perseverance. To Louis Pasteur, more than to all others, should be given the honor of having solved the problem of the causation of these dread diseases. He laid the foundations of the new science, broad and deep, with surprisingly few errors of judgment.

It is instructive to look at the leading features of Pasteur's life work. From the beginning of his career, Pasteur was the defender of pure science, yet his work demonstrates well the ultimate practical value of what seems at first purely scientific. At the age of thirty-one he became a professor and dean of the Faculty of Sciences at Lille, and in his opening address he said to his students: "You are not to share the opinions of those narrow minds who disdain everything in science that has not an immediate application." And then he quoted that charming story of Benjamin Franklin, who when witnessing a demonstration of a scientific discovery, was asked: "But what is the use of it?" Franklin replied: "What is the use of a new-born child?"

Pasteur's various scientific labors form a strikingly connected series, each being logically bound to those that preceded it. Beginning with a study of the forms and significance of the crystals of certain salts, in which he made use of fermentation processes, he passed directly to the study of fermentation itself. He early appreciated the fact that this phenomenon, due as it is to the presence in fermentable liquids of microscopic living bodies, bears significantly on fundamental physiological processes; and his labors directly established the germ theory of fermentation. Fermentation led to his famous investigation of the problem of spontaneous generation, which for ages had vexed the scientific and popular mind. Organic liquids exposed to air soon become putrid and filled with microscopic beings, the origin of which was a mystery. Many believed them to originate spontaneously; others thought that the air contained a mysterious creative influence. "If in the air," thought Pasteur, "let us find it;" and by the simple device of stopping the mouths of flasks of sterilized liquids by a bit of cotton wool, he was able to filter out the influence and keep his liquids pure and free from life. At the end of a year's active work he announced a most important fact: "Gases, fluids, electricity, magnetism, ozone, things known or things occult, there is nothing in the air that is conditional to life except the germs that it carries." His position was assailed by clever men, and he was forced to defend himself. It was here that his power of perseverance first formidably asserted itself. The struggle lasted for years, and Pasteur repelled each attack, point by point, with facts acquired by ingenious experimentation, with the ultimate result of giving to the doctrine of spontaneous generation its death blow.

Fermentation and spontaneous generation prepared Pasteur for his next victory. The French wine trade was threatened with disaster. Wines prepared by the accepted methods often became spur, bitter, or ropy. It was said that they suffered from diseases, and the situation was critical. It was Pasteur's achievement not only to prove that the diseases were fermentations, caused not spontaneously but by microscopic germs, but also to suggest the simple but effective remedy of heating the bottles and thus destroying the offending organisms.

It seemed a long step from the diseases of wines to the diseases of silk worms, yet when a serious epidemic, killing the worms by thousands, threatened irreparable injury to the silk industry, it was only natural that Pasteur, with his growing reputation for solving mysteries by the diligent application of scientific method, should be called upon to aid. He responded with his customary enthusiasm, and for five years diligently sought the cause of the trouble and the cure. Though stricken by paralysis in the midst of his work, in consequence of which for a time his life hung in the balance, in three months he was again in his laboratory. Here, as in his previous labors, he achieved final success. He proved that the silk

worms were infested with distinct diseases, due to easily recognizable germs. Furthermore, he devised efficient methods of eliminating the diseases, and thus he relieved from its precarious condition the silk industry of France and of the world.

By the year 1870 Pasteur's success had already assured him, at less than fifty years of age, a commanding place in the scientific world. His demonstrations of the all-important parts played by microscopic organisms in the phenomena which he had studied, had stimulated widespread investigation. He had already dreamed of the germinal nature of human diseases; and now medicine, which had long suspected them to be associated with fermentation processes, began to appreciate the significance of the new discoveries. In 1873 he was elected to fill a vacancy in the French Academy of Medicine, and from that time on he gave more exclusive attention to pathological phenomena. He investigated septicemia, puerperal fever, chicken cholera, splenic fever, swine fever, and lastly rabies. To speak at length of what he accomplished in this field would require much time. I would however mention one salient incident.

One day, chance revealed to him a unique phenomenon, the further study of which led to one of his most significant discoveries. In the inoculation of some fowls with chicken cholera, not having a fresh culture of the germs, he used one that had been prepared a few weeks before. To his surprise the fowls, instead of succumbing to the resultant disease, recovered, and later proved resistant to fresh and virulent germs. This was the origin of the pregnant idea of the *attenuation*, or weakening, of virus, which, nearly a hundred years before, Jenner unknowingly had demonstrated in his vaccinations against smallpox, and which had been employed by physicians in all the intervening time. By various methods of attenuation Pasteur succeeded in producing vaccines from the virus of several diseases, and he perfected the process of vaccinating animals and thus protecting them from attacks of the diseases in question.

The story of Pasteur's brilliant investigations of hydrophobia is too recent and too well known to relate here. They form a fitting ending to a life rich in scientific achievement, stimulating to research, and momentous in the history of scientific medicine.

In the summer of 1886 it was my good fortune to spend a few hours in the presence of this man in the rooms of the then newly organized Pasteur Institute in Paris. It was in the early days of the practical application of the results of his long-continued, devoted experimentation regarding the cause and treatment of hydrophobia. In a large room there was gathered together a motley company of perhaps 200 persons, most of whom had been bitten by rabid animals. Men, women and children, from the aged to babies in the arms of their mothers, richly dressed and poorly dressed, gentle folk and rude folk, the burgher and the peasant; from the boulevards

and the slums of Paris, from the north, south, east and west of France, from across the channel in England, from the forests and steppes of Russia where rabid wolves menace, from more distant lands and even from across the seas—all had rushed impetuously from the scene of their wounding to this one laboratory to obtain relief before it was too late. All was done systematically and in order. The patients had previously been examined and classified, and each class passed for treatment into a small room at the side: first, the newcomers, whose treatment was just beginning; then, in regular order, those who were in successive stages of the cure; and, lastly, the healed, who were about to be happily discharged. The inoculations were performed by assistants. But Pasteur himself was carefully overseeing all things, now assuring himself that the solutions and the procedure were correct, now advising this patient, now encouraging that one, ever watchful and alert and sympathetic, with that earnest face of his keenly alive to the anxieties and sufferings of his patients, and especially pained by the tears of the little children, which he tried to check by filling their hands from a generous jar of bon-bons. It was an inspiring and instructive scene, and I do not doubt that to Pasteur, with his impressionable nature, it was an abundant reward for years of hard labor, spent partly in his laboratory with test tubes and microscopes, and partly in the halls of learned societies, combating the doubts of unbelievers and scoffers, and compelling the medical world to give up its unscientific traditions and accept what he knew to be the truth.

Modern Surgery.—The earliest practical application to human disease of the results of Pasteur's labors was made in the field of surgery. The horrors of the early surgery had been largely eliminated by the discovery of the anesthetic effects of chloroform and ether, and the possibility of their safe employment with human beings. But the successful outcome of an operation was still uncertain. No one could foretell when the dreaded septic blood poisoning might supervene and carry off the patient in spite of the most watchful care. Many hospitals were only death traps, the surgical patient who was taken to them being doomed to almost certain death. The suffering of the wounded in our Civil War was extreme, and during the Franco-Prussian War, the French military hospitals were festering sources of corruption, their wounded dying by thousands. To Pasteur, who realized only too well that the cause of death lay in the germs that were allowed to enter the wounds from the outside, this unnecessary suffering and death of so many brave French youths was a source of intense grief. Yet, notwithstanding his protestations and the urging of his views upon those who were immediately responsible, little good was then accomplished, for the French surgeons were slow to adopt new ideas.

In England Lister was more successful. Fired by Pasteur's discoveries regarding fermentation

and putrefaction, he conceived the idea of using carbolic acid in the vicinity of the wound while an operation was being performed, for the purpose of destroying whatever germs might be floating in the air or adherent to the surfaces. This was employed successfully, and at once the mortality of surgical operations was greatly diminished. This was the beginning of the aseptic surgery of the present day, and, in the light of what it has accomplished, Lister's achievement shines with brilliance. Carbolic acid was soon discontinued, owing to more efficient aseptic agents and methods of absolute cleanliness, but the essence of the modern surgical method is the same as at first, namely, to prevent the living germs from entering the wound. Septicemia and pyemia are no longer to be dreaded, the successful outcome of surgical procedure is practically assured, and operations that were undreamed of twenty-five years ago are now daily occurrences in the hospitals of the world. The most remarkable are those that come under the general head of laparotomy, which requires the opening of the abdominal cavity, and those performed on the brain. It may be said that the greatest development of scientific or aseptic surgery has occurred in America. Here the typical American traits of ingenuity, independence and courage have borne good fruit.

Disease Germs.—Pasteur's work was epoch-making. Apart from its revolutionizing the methods of practical surgery, it has completely changed our conception of the nature and the mode of treatment of the whole group of germ or zymotic diseases, and has gone far toward solving a host of long-existing and puzzling problems of general pathology. The actual discovery of the germs of human diseases and the proofs of their specific morbid properties did not fall within Pasteur's province. Such achievement has been the lot of others, most brilliant among whom is undoubtedly Robert Koch. The bacillus of anthrax, or splenic fever, was seen in 1838 by a French veterinarian, named Delafond, but its part as the causative agent of the disease was first shown by Koch in 1876, this being the first conclusive demonstration of the production of a specific human disease by a specific bacterium. Think how recent was this event, so significant for the development of a scientific medicine and for the welfare of the human race! Koch's demonstration was made but 26 years ago, 11 years after the close of our Civil War. But it was only after repeated subsequent experiments and the piling of proof on proof by Koch, Pasteur, and others, that the new idea was generally accepted. Since then discovery has followed discovery, and the world watches eagerly for each new announcement. Koch acquired new laurels in 1882 by demonstrating the germ of tuberculosis, and in 1884 that of the terrifying Asiatic cholera. In 1884, also, Klebs and Löffler found the bacillus of diphtheria, and several investigators that of tetanus. The year 1892 revealed the bacillus of influenza, and 1894 that of

bubonic plague. Besides these instances, the part played by specific germs in many other diseases has already become recognized. Smallpox, measles, hydrophobia, and yellow fever still defy the investigators, but no one doubts their germinal nature.

But scientific medicine is not content with describing species of bacteria and proving their connection with specific diseases. It must show what these organisms do within the body, how they cause disease, and by what procedure their evil activities may be nullified. Persistent and devoted research has already thrown much light on these problems, yet so much is still obscure that it is difficult to generalize from our present knowledge. The germs find lodgement in appropriate places, and proceed to grow and multiply, feeding upon the nutrient substance of their host. In certain diseases, if not in all, their activities result in the production of specific poisonous substances called *toxins*, which, being eliminated from the bacterial cells, pass into the cells of the host and there exert their poisonous effects. These effects vary in detail with the species of bacterium; and thus the individual, suffering from the behaviour of his unwonted guests, exhibits the specific symptoms of the disease.

Preventive Medicine.—In looking over the history of the search for a means of cure, one is struck by the great value of the ounce of prevention. Keeping the germs out is in every way preferable to dealing with them after they have once entered the body. This fact scientific medicine is impressing more and more deeply on the minds of public authorities and the people, and their response in the form of provisions for improved public and private sanitation is one of the striking features of the social progress of the present time. All the more enlightened nations, states, and cities of the world possess organized departments of health, which, with varying degrees of thoroughness, deal with the problems presented by the infectious diseases, in the light of the latest discoveries. Water, and milk and other foods, are tested for the presence of disease germs; cases of disease are quarantined; and innumerable provisions, unthought of 50 years ago, are now practised daily for the maintenance of the health of the people.

In the city of New York the Department of Health now undertakes, free of charge, examinations for the diagnosis of malaria, diphtheria, tuberculosis, typhoid fever and rabies. It treats all cases of rabies by the Pasteur method free of charge, and it supplies, at slight cost, diphtheria antitoxin and vaccine virus, besides mallein to aid in the diagnosis of glanders in horses, and tuberculin for similar use with suspected tuberculosis in cattle. Moreover, from time to time it issues circulars, intended for the education of physicians regarding the causation of infectious diseases and the newest methods of treatment; and through its officers and other physicians and by means of printed matter it endeavors to educate the people in matters of private sanitation.

It requires official notification by public institutions and physicians, of all cases, not only of the epidemic diseases, but even of tuberculosis. The benefits derived from these various prophylactic measures are seen in great decrease in mortality from the diseases in question. Much good is expected from the work of the newly organized Committee on the Prevention of Tuberculosis of the Charity Organization Society of New York, which, backed by financial resources, is about to undertake an active campaign to lower the death rate from this particular disease, and to lessen the suffering and distress attributable to it.

Fifty years ago the term, preventive medicine, was unknown. To-day it represents a great body of well-attested and accepted principles. It has cleaned our streets, it has helped to build our model tenements, it has purified our food and our drinking water, it has entered our homes and kept away disease, it has prolonged our lives, and it has made the world a sweeter place in which to live.

Serum Therapy.—But if the ounce of prevention has not been applied or has failed, and the bacteria have forced an entrance into the body, what can scientific medicine do to cure? Two things are possible—the destruction of the destructive germs, and the neutralization of their poisonous toxins. The commonly recognized drugs here prove inefficient, for the simple reason that the amount of the drug sufficient to kill the bacteria is so great as to endanger the life of the patient. The most promising line of treatment has been suggested by the results of a study of the mutual relations of the bacteria and their hosts. Here again there are many gaps in our knowledge. It is not surprising that the cells of the body resent the intrusion of the barbaric horde of micro-organisms, with their poisonous off-scourings. The cells are roused to unwonted activity, and pour forth into the blood specific substances, which, in many cases at least, seem to be of two distinct kinds, the *cytolysins* and the *antitoxins*. Of these, the cytolysins are destructive to the invading bacteria, while the antitoxins are capable of neutralizing, though in a manner not wholly clear, the toxic products of bacterial growth. Cytolysins oppose the bacteria, while antitoxins oppose the bacterial toxins, and the outcome of the disease depends on the relative efficiencies of the contending forces. If the invaders prove too powerful for the body cells, the individual succumbs; if the defenders prevail, he recovers.

With the picture of this natural conflict before the mind, medical science asked: "Is it not possible to aid the invaded body by providing it with weapons of the same kind as its own, but in larger quantity?" This question medical science has answered emphatically and affirmatively in the case of two serious diseases, diphtheria and tetanus, or lockjaw. By making a pure culture of their germs, and injecting their toxin into the bodies of animals, it can obtain a blood serum heavily charged with antitoxin. This when in-

jected into the diseased human body, supplements the antitoxin there found, and by so much the patient is aided in his struggle. With both these diseases the success of the serum treatment has been pronounced. A recent study of 200,000 cases in which the antitoxin of diphtheria was used, shows the fatality from that disease to be reduced from 55 to 16 per cent. The problems presented by other infectious diseases seem to be more difficult. What seems to be required in most cases is a serum containing in quantity rather the cytolytic than the antitoxic substance, and as yet an efficient serum of this nature has not been found. Any day may yield such an one. But the matter of the relation of cytolysins and antitoxins, and their respective efficiencies in specific diseases, needs much elucidation. Serum therapy is in its infancy; but its methods appear so rational that it seems destined to develop into a most efficient branch of scientific medicine.

Second only in importance to the cure is the prevention of a future attack of the disease, or, in other words, the conferring of immunity on the individual. The disease itself, when running its natural course within an individual, confers a natural immunity against a subsequent attack, and with many diseases this may prove to be a life-long protection. Typhoid fever and small-pox, for example, rarely attack the individual a second time. In its present state the serum treatment also accomplishes immunity in some, though slight, degree, but greater and more lasting efficiency is desired. Probably no problem in bacteriology is being attacked more vigorously and more widely at the present time than this. A suggestive hypothesis by Ehrlich as to the chemical relations of the invading cells and the cells of the body, has stimulated investigations in many laboratories, and both the nature of immunity and the best method of accomplishing it, which have puzzled medicine so long, bid fair to become known in the near future. With this achieved, preventive medicine will have gained one of its greatest triumphs.

A word should here be said regarding two of the infectious diseases whose peculiar method of transmission, long a mystery, has now become known. I refer to malaria and yellow fever. The able work of Laveran, Manson, Ross, Grassi, Koch and others on the former, and that of Reed and other courageous Americans on the latter, have demonstrated conclusively that these diseases are transmitted from man to man through the aid of the mosquito, which receiving the germ from an infected individual, cultivates it within its own body and later delivers it in a properly prepared form to another unfortunate human being. Moreover, it is entirely probable that this is the sole method of the transmission of these diseases. The ounce of prevention here consists in: first, eliminating from the community, so far as possible, the breeding places of the mosquito; secondly, totally preventing, by simple screens, the access of the insect to each case of the disease. By the employment of these simple methods in

Havana, during the year ending with the end of last September, not a single case of yellow fever originated within the city, an event unparalleled in recent times. The active work now being carried on by the Liverpool School of Tropical Medicine on the west coast of Africa bids fair to reduce materially the extent of malarial fever, so long the scourge of that region.

It is impossible to predict the full outcome, in the future, of the diligent research of the past few decades in the field of the infectious diseases. Certain it is, that in civilized countries there appear no more the terrible epidemics of the past, such as the Black Death, which, in the fourteenth century, ravaged much of the continent of Europe, and in England swept away more than half a population of three or four millions. The struggle of the deadly germs for existence is becoming daily a more desperate one. Just as paleontology has revealed numerous instances of the annihilation of once flourishing species of organisms high in the scale of life, it is perhaps not visionary to look forward to the ultimate extinction of these more lowly forms and, with them, to the abolishment forever from the face of the earth of the diseases which they cause.

The study of the micro-organisms in the past and present bears upon a much wider range of subjects than the immediately practical one of the prevention and cure of individual diseases, however important that may be. It is constantly aiding, in ways surprising and unforeseen, in the solution of even long-standing and remote problems. I need only mention here that of the recognition of human blood as distinguished from that of lower animals. Moreover, this study has helped in the elucidation of many of the fundamental problems of protoplasmic activity, and has given men of medicine a broader culture and a higher outlook over the accomplishments and possibilities of the human organism. This cannot fail to react upon other fields than that of the infectious diseases, to make treatment in general a more rational matter than it has ever been, and to uplift the whole science of medicine.

Before finally leaving this subject, I would speak of the many instances of personal heroism exhibited by the men who have labored in this field. The records teem with stories of those who, recognizing more fully and intelligently than others the dangers that surrounded them, and the deadly risks they were incurring, have, nevertheless, led by their great courage and scientific devotion, gone steadily forward, sometimes to death itself. There is danger in the laboratory and the hospital, and greater danger in the midst of epidemics. "What does it matter?" replied Pasteur when his friends spoke of these perils, "Life in the midst of danger is the life, the real life, the life of sacrifice, of example, of fruitfulness," and he continued his labors. The death from cholera of a devoted and much-loved pupil of his at Alexandria, whither he had voluntarily gone to investigate the dread scourge of 1883, was a great grief to the master, but only intensified

his devotion to his work. Since then many others have met an end as heroic, martyrs to the cause of medical progress. Among these I need only mention our own Lazear, who gave up his life in the yellow fever laboratories in Cuba. Notwithstanding such tragedies, the laboratories and hospitals are always full of workers, and each new epidemic finds those who are eager to go to the scene to aid. The good to be performed and the honors to be won overcome the fears, and the ranks of laborers in this most deadly province of scientific medicine are never wanting in men.

Internal Secretion.—Leaving the subject of the infectious diseases, let me turn now to a mode of treatment based on recent experimental work, and applied successfully to certain unusual and grave maladies, which are evidently accompanied by disordered nutrition, but the cause and proper treatment of which, until very recently, were obscure.

About a dozen years ago the phrase "internal secretion" began to be employed in physiological laboratories for the first time and for a newly recognized function of glandular organs. It was well known that glands receive from the blood raw material, and manufacture from it specific secretions, which are discharged either outside the body for excretion, as is the case with the perspiration, or to the surface of mucous membranes for use in bodily function, as instanced by the gastric juice. It was discovered, however, that certain glands, such as the thyroid, the suprarenal, the pancreas, and others, manufacture and return to the blood specific substances, differing with the different glands, but of important use to the body, and the absence of which leads to profound consequences. These substances were called *internal secretions*. Thus, removal or suspension of the function of the thyroid gland, and hence the loss of its internal secretion, reduces the body to a serious pathological state, long recognized by the name myxedema. Of similar causation is the peculiar condition, called cretinism, which is characterized by a physical and mental stunting of the growing individual. The rare Addison's disease is associated with disturbance of the function of the suprarenal glands; and other instances might be mentioned. It seemed a simple step from the discovery of the cause to the discovery of a cure. If absence of a substance is the cause of a disease, supplying that substance ought to effect a cure, and such was found to be the case. Administering to the afflicted individual the fresh thyroid gland of animals, or a properly prepared extract of such gland, was found to alleviate or cure myxedema; and other instances of the efficiency of glandular products were recorded. So striking were the facts that active investigation of the matter was undertaken, with the result of showing that the chemical interrelationships of the various tissues of the body were profound, and a knowledge of them of exceeding value to the physician. As a possible instance of this may be mentioned the

idea, recently suggested by Professor Herter of New York, that the suprarenal gland, by means of its internal secretion may control the manufacture of sugar by the cells of the pancreas, an idea which, if proved true, may bear significantly on the causation and treatment of diabetes. There is need of much research in this field of the internal secretions, but already glandular extracts have proved a valuable addition to the remedies of the scientific physician.

Brain Surgery.—I have already spoken of the entire change in the methods of general surgery during a period of 25 years, owing to the rise of bacteriology. But I ought to mention specifically the remarkable advance made during the same time in the surgical treatment of diseases of the central nervous system, the brain and the spinal cord, for it is here that the scientific method has achieved one of its most complete triumphs.

Although it was pointed out by the French surgeon, Broca, as early as 1861, that the loss of the power of speech is associated with disease of a certain portion of the left hemisphere of the brain, it was still the general belief that the acting brain acts as a whole. This idea prevailed until 1870, when the German physiologists, Fritsch and Hitzig, demonstrated that stimulation of different areas of the cerebral surface evoke in the body different movements. This was the beginning of the experimental investigation of *cerebral localisation*, a line of research which has proved rich in results. The brain is not one organ acting as a whole, but an association of many organs, each with its specific duty to perform, but intricately associated with all the others. In the years that have passed since the discovery of Fritsch and Hitzig it has been the task of neurologists to discover the functions of the different parts of the central nervous system, to unravel their intricate interconnections, and to associate the disturbance of their functions with external symptoms in the individual. As a result of this labor the neurologist, after a careful study of his patient, now says to the surgeon, "Cut there, and you will find the disturbing agent;"—and the brilliant success of the brain surgery of the present day justifies its scientific basis.

The New Physical Chemistry.—In the early part of this address I spoke of the freedom with which medicine made use of discoveries in other sciences than its own. A very recent and striking illustration of this is that of the application of the principles of the new physical chemistry to the phenomena of the living body. From the standpoint of physical chemistry the body may be regarded as a mass of minute particles of semi-liquid living substance, the protoplasmic cells, each surrounded by a thin permeable membrane, the cell-wall, and bathed externally by the circulating liquids, the blood and lymph. Both the protoplasm and the external liquid contain substances in solution, and whatever passes between them, be it food, or waste, or drug, must pass in the form of a solution through the intervening

cell-wall. The laws of solutions and the laws of the passage of solutions through membranes must hence find their applications in the body. It has been the general belief that when a substance becomes dissolved its molecules remain intact, and are merely separated from one another by the water or other solvent. Quite recently physical chemistry has shown that this view is not altogether correct, but that a varying amount of disintegration takes place, a dissociation of the molecules into their constituent atoms or groups of atoms. Moreover, these dissociated particles, *ions*, as they have been called, are charged with electricity; some, the *kations*, charged positively; others, the *anions*, negatively. Electrolytic dissociation is much more pronounced in solutions of inorganic than of organic substances. In proportion to its extent specific properties are conferred on these solutions. What these properties are is not altogether clear, but it is entirely probable that the specific properties of many drugs are dependent, in part at least, on the amount of their dissociation when in solution. Furthermore, the amount of a given substance which is able to pass through a membrane is measured by the so-called *osmotic pressure* of the substance, and this, which varies with the concentration of the solution, seems to depend on the movements of the molecules and the ions within the liquid solvent. Since the physician, in the giving of a drug, wishes to induce certain cells of the body of his patient to absorb certain quantities of the drug, it is obvious that a knowledge of the principles by which substances pass through membranes will aid him.

The laws of solutions and the laws of osmosis still remain largely obscure, and because of this the literature of the subject contains much that is of little value—deductions from insufficient data, conclusions of one day which are overthrown by the researches of the next, fantastic imaginings which only throw discredit on the really worthy, and hopes buoyed up by the light of an *ignis fatuus*. But enough of truth has been already revealed to stimulate active research for the sake of physiological progress, and to show that the subject bears profoundly on the problems which the physician meets daily. It is partly along this line that the revitalized science of pharmacology, the study of the physiological action of drugs, which for several years has been actively pressing to the front, promises to make still more rapid progress in the near future.

Medical Schools.—The growth of scientific medicine, some of the branches of which I have thus tried to present to you, has reacted powerfully on our medical schools. The prominent features of this reaction are: The increase in the requirements for admission, the greater amount of laboratory and clinical instruction, the extension of the course in length, and the inclusion of the medical schools within universities.

Within a few years the requirements for admission to medical study have been raised from an elementary education, by many schools, to that of

a high school course or college preparation, by a few to a partial college training, and by two to a full college course with a resulting bachelor's degree. As the wisdom of the latter is still not generally conceded, it is doubtful whether in the near future it will become widespread. Ideal as it seems, the one argument against it, that thereby the young man is forced to delay entrance to his life-work until a late age, has never been satisfactorily answered. President Butler's recent pronouncement in favor of a division of the college work into a two-year and a four-year course, has much in its favor. This would allow a certain amount of those studies which are pursued for the purpose of general education and culture, and a grounding in the especially necessary chemistry, physics, and biology.

The increase in the amount of laboratory and clinical instruction is merely in harmony with the truth that seeing is believing. "Study nature, not books," says Agassiz, and he might have added for the guidance of the teacher, "Weary not your pupils with words, let them see things."

In length the medical course has rapidly increased from two to three, and from three to four years. With the increase in the number of hospitals throughout the land, and the opportunities offered therein to recent graduates to serve as internes under competent visiting physicians, one or two years more may be added to the student's equipment, making a training of five or six years before the young doctor actually begins independent practice.

The inclusion of the medical schools within universities is one of the most important advances of medical education made in many years. Of the 156 schools existing in this country 74, or nearly one-half, are departments of colleges or universities. In this respect, however, America is still far behind Germany, for in the latter country no medical school exists except as a part of the larger institution. The advantages of such a connection are too obvious to dwell upon. Apart from the material benefits that are likely to accrue to the school, and the prestige granted it in the educational world, there is the atmosphere of a higher culture, a more scientific spirit, and less utilitarianism, which is breathed by instructors and students alike and which cannot fail to make the graduates broader men. In the larger of these university schools a portion of the teaching body consists of men who do not engage in medical practice, but, like the instructors in the non-professional schools of the university, give their whole time to their specialties, in teaching and research. Usually these are the holders of the chairs of the non-clinical, basal sciences, anatomy, physiology, pathology, bacteriology, physiological chemistry and pharmacology. The outcome of this must be to broaden and deepen the scientific basis of medicine. The clinical branches are still taught by men who are at the same time private practitioners. In a recent thoughtful essay on "Medicine and the Universities," a professor in one of our leading medical

schools urges the further severance of medical teaching and private medical practice. He would have internal medicine, surgery, obstetrics, and, indeed, all the principal clinical departments of instruction, placed like the fundamental sciences, "on a true university basis," by which he means that the holders of these chairs should devote all their time and energy to teaching and research. This would require the paying of large salaries and the building of extensive university hospitals, wherein the professors could carry on their investigations. In my opinion the benefits that would thus accrue to scientific medicine far outweigh the arguments that may be brought against so radical a change, and, notwithstanding its highly idealistic character, in view of the present unparalleled generosity of private wealth in endowing scientific research, the present rapid and sure progress of medicine, and the intimate connection of medical advance with the interests of all classes, I look forward confidently to the future establishment of our medical schools on a basis more nearly parallel with that of the non-professional schools of the university.

What now as to the future of medical science? With the impetus which it has received from the mighty strides of the past 25 years, its future progress and future great achievements are assured. But it behooves us in whose hands lies the training of the physician, to see that he enters on his work with a full realization of his responsibilities. *The future of scientific medicine lies with the university.* "Though the university may dispense with professional schools," said President Wilson in his inaugural address at Princeton a few weeks ago, "professional schools may not dispense with the university. Professional schools have nowhere their right atmosphere and association, except where they are parts of a university and share its spirit and method. They must love learning as well as professional success, in order to have their perfect usefulness." The perfect usefulness of the professional school consists, not merely in teaching our embryo physician how to destroy bacteria, to remove tumors, or to calm the fire of fevers. These things he must understand, and these he must do daily for the suffering individual. But beyond these are larger tasks. The physician's life should be one of service and of leadership combined. He serves well when he relieves suffering; still better, when he teaches men how to live; but he serves best of all, when he pushes out into the unknown and makes medical science the richer for what he contributes to it. The knowledge of wise men, the deeds of diligent men, and the valor of heroes are the gift of those who have preceded him. Let us see to it that he pass on this heritage augmented, to those who follow.

Illinois State Association of Trained Nurses.—The regular monthly meeting of this association was held Dec. 8, in Schiller Hall. Dr. W. A. Evans, president of the Chicago Medical Society, addressed the members.

ORIGINAL ARTICLES.

ACUTE PANCREATITIS; WITH THE REPORT OF THREE CASES.

BY GEORGE WOOLSEY, M.D.,
OF NEW YORK.

ACUTE inflammation of the pancreas as a condition amenable to surgical operation is not of frequent occurrence, and is rather obscure. Considerable light has been recently thrown upon this subject by the publication of pathological and experimental researches, and the report of operations. The three cases here reported all belong to a distinct group of inflammations of the pancreas, with acute onset and general invasion of the peritoneum, and without gangrene or abscess of the pancreas. A similar case operated upon by Dr. Eliot was in my service during convalescence.

The classification of pancreatic inflammations has formerly, for some unknown reason, been unlike that of inflammation elsewhere. Robson¹ wisely adopts the classification of acute, subacute, and chronic which is applied to inflammations elsewhere. Acute pancreatitis may be divided into several varieties according to the presence or absence of certain striking features and sequelæ, *i.e.*, hemorrhage, necrosis, abscess, or general peritonitis.

Acute pancreatitis is one of the causes of sudden death, as first brought into notice by Zenker in 1874, and in most cases of acute pancreatitis the patient is in a more or less profound collapse at the onset of inflammation. This collapse Brentano² attributes to the infection of the peritoneum, which, in his opinion, most often takes place through the perforation of a suppurating focus in the gland. But as the collapse comes on at the very onset, this explanation seems hardly probable. The nearness to the solar plexus is assigned by others as a reason for the collapse. In acute cases, such as those leading to sudden death, the presence of hemorrhage is a frequent feature. The gland is more or less infiltrated with small hemorrhages, and more extensive ones may be found in the root of the mesentery, the retro-peritoneal tissue, or the lesser peritoneal sac. It is still a disputed point whether this hemorrhage is primary, or is secondary to the inflammation and results from it. The latter view has been strongly upheld by Fitz, and is now the one most generally accepted. In Case I there was apparently a hemorrhagic condition, by which the fluid in the peritoneal cavity was deeply colored and the report of the microscopic examination of this fluid stated that it "looks like decomposed blood." Robson¹ was the first to suggest an explanation of this hemorrhage in cases of acute pancreatitis. He suggested that it was due to the action of the glycerin liberated in the fat necrosis. It has also been suggested³ that it might rather be due to the action of the peptones and albumoses produced by the action of the pancreatic juice escaped into the tissues. Besides the hemorrhages, a hemorrhagic tendency, similar to that sometimes observed in cholemia, is sometimes present in pancreatitis.

This, Robson¹ thinks, may perhaps be explained by a diminution of blood-plates, which was found on examination. This hemorrhagic tendency is more often, if not exclusively, observed in cases of chronic pancreatitis where the indurated head of the pancreas obstructs the common bile-duct by pressure. Robson has found doses of calcium chloride (gr. 30-60 t.i.d.) useful in the prophylaxis or treatment of this hemorrhagic tendency, especially when due to pancreatitis.

Another feature of some cases of acute pancreatitis, also illustrated by Case I, is the occurrence of fat necrosis in the subperitoneal fat, as in the omentum, etc. This condition is sometimes found in other ailments, but is rarely met with apart from affections of the pancreas. It is not found in all acute pancreatic diseases, and is most constant in hemorrhagic and necrotic pancreatitis, less often in pancreatic abscess, etc. This is borne out by the three cases reported, for the condition was found in only one, and that a case of hemorrhagic pancreatitis. It is essentially due to the interference with the discharge of the pancreatic secretion, and to its escape into the tissues, whence it may enter the lymph and blood-vessels. Flexner⁴ has studied fat necrosis pathologically and experimentally, and reaches the conclusion that the escape of the pancreatic secretions into the tissues about and near the pancreas is the cause, and that this escape is chiefly due to lesions of the pancreas, including those interfering with the discharge of its secretions, and also to disturbances of its circulation. He thinks that it is highly probably that fat necrosis is due to the presence of the fat-splitting ferment steapsin which he could demonstrate to be present.

Flexner⁴ states that the pancreatic secretion may enter the peritoneal cavity without setting up a diffuse inflammation. In Case I, where fat necrosis was present, and in Case II, where pancreatic secretion was found in the fluid in the peritoneal cavity, no pathogenic organisms were found. Williams⁵ states that peritonitis is not usually present with multiple fat necrosis. Ceccherelli,⁶ in a paper read before the Paris Congress in 1900, says that the extravasation of normal pancreatic secretion into the peritoneal cavity never causes peritonitis. Bottini⁷ states that the pancreatic secretion, coming in contact with the peritoneum, may indirectly cause peritonitis, but the essential cause of the latter is bacterial infection. Bacteria may reach the pancreas through its ducts, and in other ways, and are the immediate and essential cause of the various forms of acute pancreatitis.

Another variety of acute pancreatitis is characterized by the occurrence of necrosis of the tissue of the pancreas in whole or in part. As to its cause Opie⁸ regards it as a late stage of the hemorrhagic lesion. Experimentally it is shown that lesions of or near the pancreas are apt to involve necrosis of that organ. This condition has been operated upon a number of times, but the prognosis is grave. R. Morian,⁹ in 1889, stated that of 11 cases operated on for hemorrhagic necrosis of the pancreas, with abscess, only one re-

covered, and that one had severe diabetes later on. That these figures do not represent the results of the more recent surgery of the pancreas is evident from an examination of the literature and from personal reports. Brentano¹⁰ reports a case of recovery after operation and two cases of Hahn's. Broeckel,¹¹ in a paper read before the Paris Congress of 1900, reports 20 operations on pancreatitis purulenta et gangrenosa with 11 recoveries.

Suppurative or purulent pancreatitis is another variety or advanced stage of acute pancreatitis. A localized abscess may occur in or about the pancreas, as a result of necrosis of the pancreas or without the occurrence of such necrosis. Abscess may also result from a subacute pancreatitis. It is in this variety or stage that most operations for acute and subacute pancreatitis are performed. In the three cases forming the basis of this report, and the similar case of Dr. Eliot's, there was no localized abscess, but the infection of the peritoneum was more general. Hence we may be justified in grouping these cases as another variety of acute pancreatitis. The reports of operations on such cases in the literature of the subject seem less common, hence the greater interest attaching to them.

In this connection we may remark that Flexner adopts Oser's classification into: (1) Acute hemorrhagic, (2) suppurative, (3) necrotizing, and (4) chronic indurative pancreatitis. But, as we have seen, the first three forms are merely varieties of acute pancreatitis.

As to the etiology, the cases here reported have little to suggest except that alcoholism, which was pronounced in Cases II and III, is an important factor, probably by causing a gastro-duodenal catarrh. The latter condition is indicated in the several attacks of colicky epigastric pain associated with vomiting. As Robson¹ says, the essential and immediate cause of the various forms of pancreatitis is bacterial infection, and the usual channel of infection is the duct. Hence the inflammation of the gastro-duodenal tract predisposes to this infection. For a similar reason stones of the pancreatic duct or the lower end of the common bile-duct may act as extrinsic causes, as pointed out by Robson and others. The last-named writer was told by a pathologist that in cases of obstruction of the lower end of the common bile-duct pus can usually be expressed from the duct of Wirsung. It is in the etiology of the chronic forms of pancreatitis that impacted gallstones, or operations performed for their removal are particularly important. None of the cases here reported gave a history of previous injury, which is one of the causes of pancreatitis. It may result from trifling blows, and it has been suggested that the sickening sensation due to blows on the epigastrium is due to the bruising of the pancreas rather than of the solar plexus. Acute pancreatitis is most common in males, and sometimes attacks those in the most robust health.

As to the symptoms, all my cases were much alike. There was a sudden onset with more or

less collapse—as indicated by the pallor, feeble and rapid pulse, and general prostration—severe cramp-like epigastric pain, not relieved by the vomiting, distention of the abdomen, and an irregular temperature. In the class of cases reported there is soon abdominal rigidity and tenderness, but no mass can be palpated. In only one of the cases (Case I) was there obstinate constipation simulating intestinal obstruction. This is not infrequently observed, and may lead to an error in diagnosis. It is attributed by Brentano¹⁰ to effusion into the lesser peritoneal sack, causing an irritation of the peritoneum. The distention of the colon, etc., is thought by Dörfler¹² to be due to pressure on the solar plexus.

Glucose in the urine was only present in Case III, and was here an important factor in leading to a diagnosis. In Robson's¹ experience it rarely occurs, in fact appearing only in extensive cirrhosis or malignant disease of the pancreas. Brentano¹⁰ says that it appears when the pancreas in whole or in part has been destroyed. It has also been observed after operations for necrosis of the pancreas. Opie⁸ detected a relationship between lesions of the islands of Langerhans and the occurrence of diabetes.

Fat in the stools was not observed in any of the cases reported, though Robson regards it is more common than glycosuria, but not at all universal. Although Walker, of Peterborough,⁴ showed that the absence of pancreatic secretion from the intestines, even if the bile is present, led to pale-colored stools, the latter were dark in all the cases reported, though, from the condition of the pancreas as felt, it is more than probable that none of its secretion entered the intestines.

The diagnosis is almost always difficult and uncertain, owing to the variety of inconstant and contradictory symptoms. The sudden onset, collapse, severe and cramp-like epigastric pains not relieved by the vomiting, the abdominal distention, in connection with some etiological factor (injury, alcoholism, biliary calculi, etc.) and the exclusion of other lesions, sometimes enable one to make a very probable diagnosis. When, in addition, there is glycosuria or an excess of free fat in the stools, the diagnosis is still more probable. Most cases are not diagnosed before operation. This happened in Case I. In Case II a probable diagnosis was made by reason of the recent occurrence, within a week, of Case I. Case III was diagnosed by the group of typical symptoms combined with the alcoholic history and the glycosuria. As to the confirmation or establishment of the diagnosis by the operation—in all three cases the pancreas was felt to be hard and enlarged throughout; in Case I there was fat necrosis and bloody fluid; in Case II the fluid gave a pancreatic test; and in Case III there was peritonitis without other cause. Edsall¹³ has studied the diminution of the ethereal sulphates in the urine to which some attach importance as an aid to diagnosis. He concludes that this sign is

not constant, nor of much value, and only of importance when positive.

As to operative treatment, it is generally admitted that operation should be avoided in the acute early stages when the symptoms are indefinite and the patient is in collapse. As the diagnosis is uncertain, the operation is often undertaken for some of the conditions which it simulates and from which it may be difficult to differentiate it—intestinal obstruction, septic peritonitis from an unknown cause, biliary colic, etc. In the class of acute cases represented by those here reported, the treatment resolves itself, as Robson¹ well says, into that of peritonitis commencing in the superior abdominal region. I have employed anterior abdominal incisions only; Robson¹ recommends, in addition, or as a substitute if the diagnosis is made, a posterior incision in the left costo-vertebral angle. The latter is especially useful in cases of necrosis or of localized pancreatic abscesses. Of course, in cases like those reported irrigation and drainage of the peritoneal cavity are necessary. Vigorous stimulation is required, with or without saline infusion during and after the operation.

The prognosis is grave in acute pancreatitis. If the patient survives the collapse there is the danger of necrosis, abscess, or general peritonitis. The prognosis varies with the severity and form of the acute inflammation. Statistics are not yet sufficient to warrant an exact statement. The hemorrhagic form appears to offer the worst prognosis, five recoveries in 23 operations (Boeckel¹¹), the necrotic form the next worse, if it is not equally bad. When a localized abscess forms, the prognosis is probably better. What the prognosis is, in the variety of acute pancreatitis to which my three cases belong, I am unable to say. Certainly the 100 per cent. of recoveries of these three cases would not apply to a large number of similar ones. These were all very sick patients, and in all the result was very uncertain for some days after operation. The prognosis in all was considered very doubtful. Undoubtedly the prognosis of acute pancreatitis without operation is very much worse. Recovery without operation is almost out of the question, though Morian⁹ states that two cases of recovery are known after spontaneous evacuation through the bowels.

The pancreas itself is now added to the list of those parts attacked directly by operation. Ceccherelli⁹ says that experimentally the removal of the entire pancreas is possible and is compatible with life, and F. Franke¹⁴ reported at the last Congress (1901) of German Surgeons three cases of carcinoma of the pancreas operated on by himself, in one of which total extirpation was said to have been performed with recovery. The patient died 5½ months later of recurrence in the lymph nodes without the occurrence of diabetes. Of the three cases whose histories are appended, Case II was seen a year later in good health, and Case III was recently under observation and in excellent condition.

Case I.—Acute Pancreatitis. Fat Necrosis of Omentum.—T. H., female; aged twenty-four years; single; admitted Sept. 21, 1900.

Previous History.—Typhoid fever seven years ago. Two years ago several attacks of cramp-like pain in the epigastrium with vomiting, lasting several hours.

Present illness began three days ago with cramp-like pain in the epigastrium. After 24 hours, pain most severe in right iliac region. Vomiting began on second day and has persisted. Bowels constipated for past three days in spite of cathartics.

Examination.—Patient is poorly nourished, anemic, and looks sick and septic. Tongue heavily coated. Abdomen somewhat distended. General rigidity and tenderness of the abdomen, more marked in the lower half of right side. Pain in the abdomen is severe and general, most marked, however, in region of appendix. No mass palpable. Vaginal examination: Cervix points somewhat transversely, tenderness in right lateral fornix, no mass palpable.

Operation, Sept. 21.—Intermuscular incision over appendix. Several ounces of a dark-brownish fluid came away, and still more of the same fluid was removed from the pelvis. The appendix and pelvic organs found to be normal. Gall-bladder felt to be slightly enlarged and adherent. Oblique three-inch incision parallel with and below right costal margin exposed gall-bladder, which was a little distended and adherent to omentum at one or two points. Several ounces of a dark-brown fluid escaped on opening the peritoneum. At the junction of the small omentum with the lesser curvature of the stomach was a greenish-yellow patch of the size of a quarter of a dollar, looking necrotic, and a similar area in the great omentum just below the stomach, surrounded by several smaller patches. In the omentum presenting in the lower wound were two or three areas studded with small yellowish-white spots resembling fat necrosis. Specimens from these and the upper areas were taken for examination. The pancreas was palpated and felt to be much enlarged and hard. Drainage of sterile gauze surrounded by rubber tissue introduced through lower wound to iliac fossa and pelvis and through upper wound to gall-bladder and necrosed area near stomach. The remainder of the wounds were sutured in layers. Probable diagnosis of acute pancreatitis with fat necrosis. Patient collapsed during operation, but responded to saline infusion of 1500 c.c.

The temperature rose to 101.5° F. on the two following days, and to 102° on the third day, but after that came down. The pulse, during the same time, varied from 92 to 120, and then dropped with the temperature. For the first two days the patient was restless, complained of severe abdominal pain, and vomited once each day. The bowels did not move until the third day after the operation, after which the patient was more comfortable. The drainage-wicks were gradually shortened and two small sinuses remained

when the patient was discharged, Oct. 10, to return for dressings to the accident ward.

Pathological Examinations.—Leucocytes: Sept. 21, 39,000; Sept. 22, 15,500; Sept. 28, 16,800; Oct. 2, 14,200. Examinations of urine showed a trace of albumin, no casts, a few leucocytes, a maximum specific gravity, 1.034, Sept. 22, and no sugar. Specimen excised from omentum; microscopic examination (Dr. Thacher); a number of little spots of fat necrosis surrounded by a little inflammatory infiltration. Fluid from abnormal cavity; microscopic examination (Dr. Thacher); specimen looks like decomposed blood.

Case II.—Acute Pancreatitis.—F. J. C., male, aged thirty-two years; married; driver; admitted Sept. 26, 1900.

Previous History.—Moderately heavy beer-drinker. Denies venereal history. Never had jaundice. Always well, save for attacks called colic. One year ago severe epigastric pain and frequent vomiting, bowels regular. In bed two weeks. Four months ago similar attack. The pain would occasionally shoot up to the right and left shoulder and from the epigastric region around the right costal margin. Similar attack on the evening of Sept. 21, but not so severe. He worked the following day, but has not felt well since.

Present illness began with a chill the night before admission, and with increase of epigastric pain. Bowels moved after cathartic. At 10.30 A.M. was seized with violent cramps in abdomen, and vomited three times.

Examination.—Patient is somewhat anemic and looks sick and septic. Tongue coated. Slight abdominal distention. Abdomen is rigid, especially under the costal margin. Tenderness marked in epigastrium and both hypochondriac regions, slightly more on right side. No mass palpable. Some tenderness in lower right side of abdomen and around umbilicus. Patient suffering severe pain. Diagnosis of possible pancreatitis, the first case being in mind.

Operation, Sept. 26.—Three-inch median incision above umbilicus. Slightly turbid serum escaped from general peritoneal cavity. Gall-bladder and stomach normal. Intestines slightly congested. The pancreas could be palpated through the stomach, traced from left to right and felt to be hard and enlarged. The head especially presented a hard mass, suggesting inflammatory deposit or new growth. Drainage down to the foramen of Winslow, sterile gauze surrounded by rubber tissue. Pulse rapid and feeble at end of operation.

The temperature ran high, 101.5° to 104° F., and the pulse rapid, 86 to 140 for the first four days only. Saline infusions given Sept. 27. No vomiting after recovery from ether. Patient very restless, noisy, and delirious much of the time for first week, and then much better. He was alcoholic, and large quantities of whisky seemed to effect his restlessness and delirium better than drugs. The bowels moved the second day and regularly thereafter. The urine contained epithe-

lial, granular, and hyaline casts, and a considerable trace of albumin, but no sugar. The drainage was removed after 48 hours and considerable reddish-brown fluid escaped from the wound. The stitches were removed on the fifth day.

The leucocytosis was 17,600 Sept. 26, before operation; 21,400 Sept. 27, and 9,000 Oct. 1. Pathological examination of fluid from peritoneal cavity showed microscopically very large cocci, evidently non-pathogenic. It changed boiled starch into glucose in half an hour, indicating the probable presence of some element of the pancreatic juice (Dr. Tuttle).

Discharged cured, Oct. 15, 1900.

Case III.—Acute Pancreatitis. General Peritonitis. Pelvic Abscess.—J. P., male, aged twenty-nine years; married; truckman; admitted July 27, 1901.

Previous History.—Is a steady and hard drinker of beer and whisky. Smokes to excess. No history of syphilis. Always well, except for attacks of "indigestion" after drinking hard, when he has pain, chiefly in the epigastrium. He was a painter six years ago, but never had painter's colic.

Present Illness.—He had been drinking hard and eating almost nothing for the past week or more and had vomited occasionally. On July 16 (the day of admission to the Medical Division) after drinking beer he vomited immediately and had sharp pain in epigastrium which was not relieved by vomiting and did not radiate. The whole abdomen was markedly tender, rigid, and distended. The vomiting continued for the first few days in hospital and the vomitus was greenish in color. The bowels were regular, the stools dark brown, and no free fat or fatty crystals were detected. The urine was of high specific gravity (1.050) and contained sugar; the first day gr. xxviii. to oz. i., the second day a trace, and none subsequently. Many hyaline casts were present. The temperature was irregular (99° to 102½° F.) with a tendency to an evening rise. Pulse, 88 to 110, small and soft.

I first saw the patient July 17, at the request of Dr. Thacher, and again on the eighteenth and nineteenth. The diagnosis of probable acute pancreatitis was made from the alcoholic history, the sudden onset, the intense epigastric pain and tenderness not relieved by vomiting, the abdominal distention, the sugar in the urine, and by exclusion. As the symptoms gradually but steadily diminished, operation, though advised, was delayed. On July 26 the leucocytosis was 26,000; abdominal distention had reappeared; and tenderness and rigidity, which had increased in the last two or three days, were more marked in the lower right side of the abdomen. Septic peritonitis was evidently present, and he was transferred to the surgical side July 27.

Operation, July 27.—Median incision below umbilicus. On opening peritoneum a large quantity of foul-smelling purulent serum mixed with gas escaped. This pus was found throughout the

peritoneal cavity, which was thoroughly washed out. A median incision was made above the umbilicus, and the pancreas was felt to be much enlarged, firm, and hard. A few adhesions were found between the stomach and liver, and were broken up. Otherwise the viscera were normal, except for congestion of the intestines most marked in lower half of abdomen. The appendix was not found on the right side, and the pelvis was closed by adhesions of the intestines. These adhesions were broken up, and revealed an abscess in the pelvis containing pus similar to, but thicker than, the pus in the peritoneal cavity. In the walls of the pelvic abscess was the appendix, which was swollen, but apparently not otherwise diseased. This pelvic abscess was thoroughly cleaned out. Owing to the poor condition of the patient I refrained from dividing the gastro-colic omentum and inspecting the pancreas, as I desired to do. Gauze drainage was carried through the lower wound from the pelvis and right iliac fossa, and through the upper wound from near the foramen of Winslow. The angles of the wounds were sutured.

The temperature reached 101° F. the second day after the operation and 104° the third and fourth days, and then gradually fell to about normal. The pulse varied from 86 to 130. He vomited considerable quantities of brownish fluid for the first four days after the operation and occasionally thereafter. There was considerable abdominal pain for the first four or five days. The bowels moved freely on the third day, and thereafter he had a profuse diarrhea for 10 days or two weeks. His appetite was poor and he emaciated rapidly. He was dressed on the third day, and daily thereafter for some time. The discharge was profuse, the drainage gradually shortened, and at the time of his discharge from hospital, Sept. 6, the upper wound had been healed for three weeks, and a small granulating area remained in the lower wound. His weight was much increased and his general condition greatly improved.

Pathological examination of fluid from abdominal cavity by Dr. Tuttle showed streptococci, but the growth was not characteristic of the most virulent variety.

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International Historical Congress.—This Congress will take place at Rome in April, 1903. It is intended that a section shall be devoted to the history of medicine.

RUBELLA SCARLATINOSA.*

BY

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IN studying the literature on rubella, one is greatly impressed with the lack of agreement as to just what constitute the distinctive features of the disease. Practically all the later writers agree that it is a disease *sui generis* and not a hybrid or modified form of scarlet fever and measles. The question has been raised as to the possibility of another distinct disease which has heretofore been masquerading as one of the accepted forms of the acute exanthemata.

To decide this point, reports of cases and of epidemics presenting unusual features are of immense value, and for the reason of elucidation, not of confusion, this paper is presented.

The outbreak under consideration occurred in the small village of Round Lake, Saratoga County, N. Y., early in April, 1901. This is a summer resort, having a winter population of about four hundred people. The only physician residing here is Dr. P. C. Curtis, who necessarily has an intimate acquaintance with every family. The writers are greatly indebted to him for his kindness and courtesy in placing the necessary facts and data at their disposal.

On March 11 Dr. Curtis was summoned to the family of a farmer who lived just outside of the village. He found three children slightly ill with a temperature of about 100° F., pulse 80 to 90. The "throats were congested in all three cases and the glands of the neck were enlarged." On examining the body he found an eruption which extended uniformly over the chest, trunk, arms and legs. This was bright red and strikingly suggestive of scarlet fever. Dr. Curtis was greatly surprised, as he had treated two of these children a few years before when they had an attack of undoubted scarlet fever.

However, he diagnosed the disease as scarlet fever and quarantined the farm. A week later he revisited the farm to see that his orders were complied with and found that the eruption had lasted about three days and that the glands of the neck were still enlarged. This farmer supplied milk to the residents of Round Lake, but moved his cows and utensils from the farm when directed to do so by Dr. Curtis. Nineteen days after the physician's first visit, he was summoned to the farm of a neighbor of the family just described and found a young man, twenty years old, suffering from a well-marked case of German measles. The eruption first appeared on the face and extended over the entire body. At the same time, his sister, aged twelve years, had a rash on her chest and back, identical with the cases in the first family. Her face was clear, and while the throat was sore and the temperature 99½° F., the child did not feel ill. The health officer of the adjoining town was sent for and after a careful study

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of the cases he agreed with Dr. Curtis that one of the cases was German measles and the other scarlet fever.

The next day, March 31, the first case appeared in the village proper. On April first, six cases developed and the disease spread like wild fire. Dr. Curtis personally treated 147 patients and a number of cases existed to his knowledge, where, on account of the mildness of the attack he was not called. It is perfectly safe to say that one-half of the inhabitants of the village contracted the disease.

When the disease appeared in the village, Dr. Curtis began to doubt the correctness of his diagnosis of scarlet fever and sent for Dr. Frederic C. Curtis, one of the writers of this paper, who is connected with the State Department of Health. In studying this epidemic, the writers each made four visits to Round Lake and personally examined over thirty cases.

The endemic character of the disease was very striking. No attempt was made to quarantine the individual patients or the town as a whole, yet only a few isolated cases appeared in the nearby towns.

There were several instances of people who left the village during the outbreak and came down with the disease in distant parts, sometimes communicating it there to their immediate associates, but in no instance did it spread where thus transplanted. Children went daily to school in Troy and elsewhere without disseminating the infection.

In the mind of the resident health officer, there seems to be some ground for believing that the infection was carried in the milk. The first cases appeared in the family of the man who supplied milk to the village and all the cases with a few exceptions occurred in families thus supplied. There was no instance of a nursing baby having the disease and two or three infants who were being fed on cow's milk, but did not take it from the milkman, were not infected.

A majority of the patients were adults. Out of the 147 cases treated, 81 or 60 per cent. were in persons over twenty years of age. No child under twelve months developed the disease. In one family seen by the writers, the father, mother and four children had the disease in severe form and the baby was the only member of the family that escaped. The other extreme of life was not so fortunate, as 18 cases occurred in persons over sixty years of age. The number of cases at various ages were as follows: One to five years, 9; five to ten years, 26; ten to twenty years, 31; twenty to thirty years, 18; thirty to forty years, 18; forty to fifty years, 19; fifty to sixty years, 8; sixty to seventy years, 11; seventy to eighty years, four; eighty to ninety years, three.

The period of incubation as near as could be definitely ascertained averaged about 19 days. This was the interval which elapsed between the first two cases. A servant employed in the family of Dr. Curtis went to her home about 50 miles distant and after a few days came down with the

prevalent disease. Exactly 21 days later her sisters were taken ill with the same symptoms.

The onset was generally sudden and in the severe attacks was attended by feelings of malaise, headache, sore throat, slight fever and enlargement of the lymph nodes in the region of the neck, groin and axilla. In the milder form the rash and the enlarged glands were the only symptoms observed. There was no sneezing or redness of the conjunctiva in any of the cases.

Sore throat was present in every case and was often very severe. The intensity of the inflammation varied from a slight hyperemia to a severe congestion with an exudate on both tonsils in many instances. Several cultures were made and sent to the Bender Laboratory at Albany, where they found no Klebs-Loeffler bacilli.

Enlargement of the lymph glands was a constant manifestation of the disease in every instance. The chain of lymph nodes situated along the posterior border of the sterno-cleido-mastoid muscle were invariably palpable. In the severe cases those of the groin and the axilla were enlarged. They showed no tendency to suppurate or break down, although they could often be felt for five or six weeks after the attack. These glands were enlarged even in the mildest forms where a rash over the chest had been the only sign of the disease.

The pulse was not rapid and in the patients seen by the writers, it varied between 80 and 100. In no case seen by Dr. Curtis was the pulse over 120. The temperature was also much lower than would be expected from the intensity of the eruption and some of the symptoms. The average temperature was 100° F., while in a few cases it rose to 102.5° F.

The urine was examined literally hundreds of times by Dr. Curtis and in no instance was any albumin detected. One of the writers examined a number of specimens from the severer cases and those where desquamation had taken place, but could discover no traces of albumin even with the more delicate tests.

The Cutaneous Lesions.—These had some variety as observed in cases seen by us from time to time in various stages. In the majority the color was bright red, like that of scarlet fever and not infrequently would, to superficial examination, be taken for it. Closer observation showed a macular quality which was not wholly lost over areas where the eruption was apparently fully confluent. There was a greater intensity in spots with fading to a lighter hue between them. Over other areas the mottled appearance was pronounced, showing spaces of clear or but slightly congested skin. In some few instances there was more dullness of color, an approach toward the tint of measles, and the contrast was appreciable between these types in members of the same family seen side by side. There was not the punctate redness so marked in scarlet fever. Its behavior on pressure was different from that in scarlet fever; instead of the prolonged blanching with red punctæ of deeply congested papillæ

which characterizes the scarlatinal rash, there was uniform but transient blanching on pressure. This is a point of importance.

The duration of the active skin lesion was generally about a week. The majority probably terminated in flakey desquamation at least on the hands and feet, and in the more marked cases of these there was no material difference in this respect from the desquamation of scarlatina. But in other individuals seen side by side with them there was little but a branny desquamation; few failed to have some desquamation. The desquamation of the tongue which produces the characteristic strawberry appearance was not observed in any instance. The eruption was universal; our notes do not show that there was much on the face; it was most intense on the anterior trunk and the limbs.

Not a single death was attributable to this disease with the possible exception of one, a female past seventy, who had the disease and in whose case there was marked enlargement of the cervical lymph glands and who died from possible secondary complications attributable to the disease. The benign quality of the epidemic is remarkable, as there were a large number of persons affected, many of whom were severely ill.

The complications and sequelae were as follows: rheumatism, 29; bronchitis, four; pneumonia, two; erysipelas, three; erythema nodosum, three; acute otorrhea, 12; quinsy, three; pleurisy, one; cystitis, one; myocarditis, one.

A few extracts from notes taken by the writers at the bedside of some of the patients will serve to illustrate the clinical aspect of the disease:

McC., age nine years. Was first seen April 7, 1901. Two days before felt well and was outdoors all day. Was taken sick yesterday with a sore throat, headache and malaise. He acted as if he had taken a heavy cold. The eyes were not congested. Twelve hours later a rash was seen on his chest which spread rapidly over the entire body. The rash at first glance looks exactly like that of scarlet fever. It is bright red in color and the area around the mouth is white. It extends over the entire body and is more intense over the back, inside of thighs and over the knee-joints. On closer inspection the rash is more mottled and areas of healthy skin can be seen. The fading on pressure does not last so long as in scarlet fever. Tongue thickly coated and papillae not enlarged. The throat is markedly congested but no exudate is present. Pulse 100, strong and regular. Temperature 102.4° F. Lymphatic glands about neck, back of sternocleido-mastoid muscle, axilla and groin, all enlarged and palpable. April 15.—Boy is up and around but is anemic and quite weak. For the past three days has desquamated in large flakes. Large pieces of epidermis could be stripped from the abdomen. The skin was bluish and cyanotic with a mottled appearance. This boy has never had scarlet fever. Several examinations of the urine have been made all of which were negative. The parents and all the children in this family had

the disease except a nursing baby nine months old. The case described was the only one in this family where desquamation occurred.

K., age 27 years. Painter by occupation. Two days ago complained of a sore throat but went to work the next morning. In the afternoon became quite sick and had to return home and on going to bed discovered an eruption over the chest. When seen the next day the eruption was over the face, body and extremities. It is a mottled macular eruption which fades on pressure. Tongue coated and no suspicion of the strawberry appearance. Temperature 101° F. Pulse 96. Throat is red and inflamed, more so on the right side, and there is a dirty yellow exudate on both tonsils. A culture was taken which showed only staphylococci. All the glands about neck are enlarged and are more marked on the right side. The patient appears very ill. April 15.—Patient is very weak. The eruption has not fully disappeared and there is some desquamation over abdomen. He complains of pain in right ear which later discharged. He is pale and anemic and unable to go to work. The glands are still enlarged. Examination of urine negative. The wife and only child of this patient had the disease.

Girl, five years old. Was taken sick last night. The rash was first noticed on the chest and back this morning and spread rapidly over the body so that at 5 P.M. when the child was first seen it covered the whole body. The eruption is bright red in color but does not fade long on pressure. The row of glands back of sternocleido muscle are plainly enlarged. The throat is inflamed and red. Tonsils large. Tongue thickly coated. Temperature 101° F. Pulse 90. An older sister had this eruption two weeks before and the lymph nodes were still palpable. She had had a severe attack of scarlet fever six years before. An older brother also had had a mild attack and the glands were enlarged. He had had scarlet fever six years before.

The question of diagnosis in any of the eruptive diseases of childhood is not always a simple one on account of the many aspects of the eruption, differences in the length of incubation, individual idiosyncrasies, variations in the course and type of the epidemic, etc. Dr. Caiger, in a recent discussion before the British Medical Association, aptly said, that the confidence a man placed in the infallibility of his diagnosis was often in inverse ratio to his experience.

The epidemic we have attempted to describe varies from the classical text-book description of any of the established acute exanthemata in what have been heretofore regarded as essential elements. The problem of diagnosis therefore presents some difficulties.

Measles can be eliminated, as there were but one or two cases where the possibility of measles could be suspected from the character of the eruption, and there was no catarrhal involvement of the conjunctiva or upper air passages.

Rubella now occupies a conceded place among

the acute exanthemata. It has been regarded as lying between the opposite poles—measles and scarlatina. It does not protect from measles and scarlet fever and attacks of the two latter diseases afford no immunity from rubella. Confusion has arisen because, although fairly identical in other respects, it presents variations in the cutaneous lesions, in different, and even in the same epidemics. In one form, which is perhaps the more common, the skin lesions bear resemblance to measles and for convenience this has been called *rubella morbilliforme*, while the other inclines toward the scarlet fever pole and is termed *rubella scarlatiniforme*. The appearance of the eruption, sore throat and desquamation immediately suggests scarlatina, but a closer analysis of the various symptoms shows that many of the manifestations of the epidemic are incompatible with such a diagnosis.

The very striking endemic character of the infection has been mentioned and is not at all characteristic of scarlet fever, which has a decided tendency to spread wherever planted, and is very tenacious of infection. Notwithstanding the large summer influx of visitors and a lapse of 15 months there has not been a single case of scarlet fever in Round Lake since the epidemic described, or in fact for several years previous.

In a very excellent description of rubella, Ashby says that it is often prevalent in one locality and that if an individual goes to another while incubating, he suffers from an ordinary attack and the disease does not spread, although he comes in contact with many persons. This is thoroughly consistent with our Round Lake experience.

The incubation of scarlet fever is short, in a large proportion of cases it is under four days. An incubation period of six days is rare in scarlet fever. Rubella on the other hand has a much longer period of incubation and the limits set by a number of authorities lie between seven and 21 days. In the Round Lake cases the incubation period was certainly over two weeks. In two definite authentic cases it was 19 and 21 days.

One of the most constant symptoms of the invasion of scarlet fever is vomiting. In an analysis of 1,008 conservative cases of scarlet fever by Dr. Caiger, in which the history of the onset was especially studied, vomiting occurred in 80 per cent. This therefore is a symptom of no little diagnostic importance in scarlet fever, yet there was no vomiting observed in the epidemic we have described.

A point strongly emphasized in some of the text-books and recognized by most practitioners is the rapidity of the pulse in scarlet fever. This is the main, and in fact, the only distinctive feature of the pulse, and it is faster than the temperature or general state of the patient would indicate. The pulse in rubella is not accelerated, and in our epidemic it rarely rose over 100 and never over 120.

In the description of the cutaneous lesions given in the account of the disease, the character of the eruption was fully entered into and it is

unnecessary here to go further into the differential diagnosis. The question of desquamation is however a very interesting one. It has been held previously, almost as a universal axiom, that desquamation in large flakes following an eruption was proof positive of scarlet fever. This we hold to be untrue. Any severe dermatitis may be followed by such desquamation. It almost invariably follows severe sunburn and there have been cases of German measles recorded where there was a copious peeling.

Lewis Smith, writing many years ago of an epidemic of rubella, spoke of one case where the desquamation was as free and in as large flakes as he had ever seen in scarlet fever. Dukes, writing to the London *Lancet* in 1894, on rubella, mentions that he has seen desquamation as free as in the worst cases of scarlet fever. Ashby in a private communication says that the old idea that desquamation necessarily meant scarlet fever was passing away, although it was strong presumptive evidence of that disease. Schamberg in a recent article says: "I am convinced that too much stress in the diagnosis of scarlet fever has been placed on the mere occurrence of desquamation. Desquamation is the terminal stage of certain inflammatory changes in the skin, and is not at all peculiar to any one disease."

The tongue presents one of the most characteristic objective signs in scarlet fever. The epithelium becomes completely denuded after two or three days, presenting the easily recognized and typical "strawberry" tongue. In no other form of sore throat whatever do we find this appearance. Crozier Griffith in a private communication says that he has never seen a case of scarlet fever without the strawberry tongue. It is doubtful if a diagnosis of scarlet fever can be rightly made without the presence of the strawberry tongue. This appearance of the tongue has never been observed in rubella, and its absence in all the cases at Round Lake is, in the opinion of the writers, one of the strongest proofs that the disease was not scarlatina. A number of cases in various stages of the disease were closely examined by us for evidences of denudation of the tongue, but in no instance was it detected.

Involvement of the lymphatic system was a constant manifestation of the disease and presented one of the interesting features of the epidemic. The submaxillary and deep cervical glands are frequently enlarged in severe cases of scarlet fever and are more or less tender on pressure. Schamberg made a study of the lymphatic glands in 100 cases of scarlet fever and found that while the cervical glands were most frequently enlarged, the maxillary glands attained the largest size and most frequently underwent suppuration.

One of the diagnostic signs of rubella is the enlargement of the lymph glands, especially those in the region of the neck. They are invariably enlarged even in the mildest expression of the disease. Not infrequently can they be detected early in the attack, even before the appearance

of the eruption, and may remain enlarged for several weeks thereafter. Koplik reports a case in which the nurse noticed the glandular enlargement six days before the eruption came out. There is a remarkable unanimity of opinion in the literature on rubella regarding this lymphatic enlargement which is conspicuously absent concerning any of the other symptoms.

The chain of lymph nodes situated behind the sterno-cleido-mastoid are the most frequent and constant group affected. They are not painful and can be easily rolled under the fingers. It has already been stated that the lymph glands were enlarged in every case at Round Lake and that the chain of nodes just referred to were invariably enlarged. In no instance did the glands suppurate. This constant enlargement even in the mildest cases, appearing as it did in some instances before the eruption, is not consistent with the glandular involvement in scarlet fever. Enlarged glands may occur in any of the acute exanthemata and in other conditions, but the uniformity of their appearance in this epidemic is noteworthy.

Sore throat is an important and constant symptom of scarlet fever but it is also found in rubella although to a much less degree. It was present in all the cases in our epidemic, and in many cases there was a tonsillar exudate. Cheadle has called attention to the fact that in cases of rubella there is often a severe pharyngitis with enlargement of the tonsils, and even membranous film upon them.

Scarlet fever is essentially a disease of early childhood and one in which the susceptibility diminishes as the age increases. In a series of 70,000 cases collected by Dr. Caiger only 45 or six-one thousandths of one per cent. occurred in persons over fifty years of age. Rubella on the other hand, while a disease of childhood, affects adults almost as frequently as children, and in the Round Lake epidemic 11 per cent. of the cases were in persons over fifty years of age.

The mortality of scarlet fever is from two to 30 per cent. in different epidemics, and it is fair to say that the general average mortality is about five per cent. It is doubtless true, however, that the type of the disease varies much and that in recent times there has been some prevalence of scarlet fever of quite a mild type. Under ordinary conditions the prognosis of rubella may be considered invariably favorable. In crowded tenements and under bad sanitary surroundings, some fatal cases have been reported. There was not a single fatal termination to any of the Round Lake cases. An epidemic of 200 cases of scarlet fever without a single death is perhaps unheard of.

Transient albuminuria during the course of scarlatina occurs, according to Eichhoist, in from 77.6 to 92 per cent. of all cases. This does not mean that there is any pathological alteration in the structure of the kidneys although a true post-scarlatinal nephritis is present in from five to 30 per cent. of all cases. The specific virus or toxin of scarlet fever circulating in the blood acts

as a direct inflammatory irritant upon the kidneys when eliminated.

No mention is made in the literature of albuminuria occurring during the course of rubella. Ashby says that to find that a patient whom we have declared to be suffering from German measles, has acute nephritis is, to say the least, an unpleasant discovery. At Round Lake an examination of the urine was made in all of the cases, and in many of them a number of tests were made at various stages of the disease, but no albumin was ever detected and no case of nephritis developed.

Second and even third attacks of scarlatina are known to take place, but undoubted cases are rare. Henoch has seen but one authentic case of a second attack of scarlet fever and there are certainly exceptions to Cullen's law that one attack of an infectious disease always confers immunity. These exceptions are most unusual and the fact that Dr. Curtis knows positively that eighteen of the Round Lake cases had previously had scarlet fever is very strong presumptive evidence that this epidemic was not one of scarlet fever.

In so large an epidemic where the symptoms presented so similar a course, it will not be necessary to discuss the various erythematous rashes which simulate scarlet fever such as are occasionally caused by drugs and septic processes.

The existence of a fourth disease has recently been ably contended by Dr. Clement Dukes. He claims that rubella scarlatinosa is a distinct and separate disease. This claim is based on the study of three epidemics occurring in English schools. A careful analysis of his cases by such experienced observers as Caiger, Willard, Watson, Williams, Marsden, Ker and Crozier Griffith shows that in the opinion of these men he has not established his point, from the evidence of his own cases. The consensus of opinion seems to be that the first epidemic was rubella, the second both rubella and mild scarlatina and the third mild scarlatina. Ker in concluding an exhaustive discussion on this subject said that only one verdict is possible regarding the contention of Dr. Dukes, and the verdict is a Scottish one,—“not proven.”

Dukes in a letter to the London *Lancet* makes the following differential diagnosis between scarlet fever and fourth disease. (1) The pulse in scarlet fever is accelerated, while in fourth disease, even with the fullest rash, the pulse is not increased in frequency. (2) In scarlet fever with an abundant rash there is always a marked rise in temperature, while in fourth disease, even with the fullest rash, the temperature is not raised over 99° F. (3) The strawberry tongue is always present in scarlet fever while it is never observed in fourth disease. (4) After a full rash in scarlet fever there is always a copious desquamation, whereas the most intense rashes in fourth disease are not necessarily followed by any peeling. (5) Persons with fourth disease may go out and about the country, even when desquamating, and not spread the disease, whereas

in scarlet fever a widespread epidemic would inevitably result.

All the above statements concerning the fourth disease are equally true in regard to rubella, and do not in the slightest degree indicate or necessitate a distinct disease. It is unnecessary in our opinion, to further complicate the diagnosis of the acute exanthemata, and to launch into the already too troublesome sea, a new disease when minor variations are found from established type. Griffith does not express himself too strongly when he says, that the existence of a fourth disease would be a universal calamity.

SOME OBSERVATIONS IN THE CHILDREN'S HOSPITALS OF LONDON AND PARIS.*

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HOSPITAL conditions in Europe differ greatly from those in the United States. Usually a part of the State or city administration, the hospitals have abundant means, and enjoy a marvelous prestige among the people at large. Their medical staffs are not accountable to lay boards, and their authority over patients is absolute during life, both for study and treatment, and, should death ensue, for postmortem examination. But notwithstanding the many differences, the hospitals of all great cities have one condition in common—too many patients. And by reason of the vast number of patients who must be treated, they have a common problem: This problem is a complex one; for, while the chief aim in any hospital is the safe and speedy cure of the patient, there must always exist the wider purpose of advancing the science of medicine and of instructing others in its art. This means, that while indoor and outdoor patients are being cared for, the study of the etiology, physical signs and pathology of disease must be carried on; better modes of treatment must be sought out; and at the same time the abundant material provided is to be utilized to the best advantage for the instruction of students at the bedside and in the clinic. How can all this work be accomplished without overtaxing the endurance and time of the overworked house-staff and dispensary-assistants?

London and Paris present conditions probably more nearly like those of New York than any other foreign cities, and it may be interesting to note in what ways their children's hospitals are solving this intricate problem. Both London and Paris are much better supplied with hospital accommodation for children than is New York; and this accommodation is not in the wards of a general service, but mostly in special children's hospitals. In London the principal ones are the East London, Evelina, and Great Ormond Street.

These hospitals are much like our own older institutions, and, as far as the regular wards are concerned there is no great difference in their handling of patients. There is usually however a proportionately greater number of men on the house staff than with us, and this gives a chance for better work in the wards and laboratories.

But it is the management of their out-patient departments that is especially worthy of note. I shall speak particularly of the Great Ormond St. Hospital where I visited the large outdoor service of Dr. George F. Still.

From the general receiving room passage-ways lead to four treatment rooms and to the isolation room. In each treatment room there are three or four physicians and a nurse. One of the junior physicians or students acts as medical history clerk. Not more than 20 patients are allowed to be treated in any one room during the morning. Overflow cases if urgent are treated by one of the house staff detailed for emergency work. One of the attending physicians of the hospital has charge of the four rooms, and serious or obscure cases are referred to him; suitable cases being sent into the wards.

As each new patient comes into the receiving room the mother is given a card on which are printed the various questions as to pedigree and illness that will be asked by the receiving clerk and the medical history-clerk. While waiting for her turn she has a chance to think them out and be ready with the answers,—a great time-saving device. Cases that are in any way suspicious are at once sent to the isolation room; other cases are assigned in rotation to one of the four treatment rooms. There is an anteroom opening off each treatment room, and while the child waits here it is undressed, and the temperature, pulse and respiration are taken. When the medical history clerk is ready for patients he sends to this anteroom, and the children already undressed are taken in, one or two at a time, and with them goes a record of the temperature, pulse and respiration. The physical examinations are thorough, but it is surprising how rapidly the patients can be disposed of when there is not the delay of taking temperatures, and the waiting for children to be undressed. Urine and blood, cultures and sputa are examined in the hospital laboratory near-by. The small number of foreigners was noticeable to one accustomed to such a mixture of nationalities as we have here. The cases run much as with us, only there seemed to be a larger proportion of choreic, rheumatic and cardiac cases. I saw nothing extraordinary in the way of treatment. The favorite plan even with mild cases of chorea is to confine the child to bed, give absolute rest, forced feeding and comparatively large doses of arsenic. The management of outdoor feeding cases is no more satisfactory than with us. Scalded or boiled milk diluted with starchy gruels and with the addition of cream are prescribed, but the various proprietary foods have the vogue among the laity. To make sure that the mothers

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understand how to prepare the foods ordered—milk and cream mixtures, whey, gruels, beef juice, etc.—printed directions are given in each case similar to those now in use at the Babies' Hospital in this city. They also have printed directions telling how to take care of rachitic or paralyzed children. I learned that the Walker-Gorden laboratory is used by many physicians in their private practice, but there is a general lack of appreciation of the advantages of percentage feeding.

Across the Channel, in France, they have many ways of honoring the medical profession, but their custom of naming the hospitals after noted physicians seems especially appropriate. The impression produced upon me as I passed into the different pavilions under the names of the great French physicians of the past was both thrilling and inspiring. The public recognition and honor which the profession receives in France must prove a powerful incentive to the medical man to do worthy work.

In Paris the principal hospitals for children are the Hôpital des Enfants Malades, Hôpital des Enfants Assistés (corresponding to one of our foundling or orphan asylum hospitals), Hôpital Trousseau and Hôpital Bretonneau. The first thing that strikes one on entering is that the hospitals have abundant light, air and ground. The Hôpital des Enfants Malades, though old and in a populous district, occupies as much land as one of our large city blocks. The newer hospitals—Trousseau and Bretonneau—have been built on the outskirts of Paris, one to the East and the other to the North. These locations have been chosen, not for economy, since the government pays for them, but because of the better results obtained in hospitals far removed from the city's dust and noise. The hospitals are all laid out on a large scale, the general plan being that of a system of pavilions. Even the old Hôpital des Enfants Malades has two fine new pavilions for measles and diphtheria.

A description of the Bretonneau Hospital will give a fair idea of all. Naturally the out-patient department is nearest the street. Here I noticed in one of the examining rooms a peculiar arrangement for partial isolation of suspicious cases—several stalls in which patients were put until the physician had a chance to examine them. Each attending physician of the hospital is responsible part of the year for the out-patient department, having his set hours for "consultations externes" which he attends as regularly as his indoor service. In this manner the responsibility for the externe service is placed, and the outdoor patients have the advantage of the "Professor's" diagnosis and advice on their first visit to the dispensary. Beyond the out-patient department are the various pavilions of the regular service—surgical, medical, pathological, and a pavilion each for diphtheria, measles, scarlet fever and whooping-cough. The pavilions are low, only two or three stories high, and are separated from each other by stretches of lawn and gravel walks. One of the internes called my attention

to the fact that the scarlet-fever pavilion overlooks the wall of the Montmartre cemetery; but this has really no sinister significance, since the mortality from scarlatina is very low. Before leaving the entry gate of the hospital each student or visitor is invested with a gown which is worn throughout the round of the medical wards. At each different contagious pavilion another gown is added, to be discarded on leaving that pavilion. They are just as careful about entering an ordinary medical ward as we are here about going into the pit of a surgical amphitheatre to witness a major operation. This practical belief in the communicability of disease is well-manifested by the many devices for isolation—even of patients in the same contagious pavilion. In each ward there are two or more isolation rooms, and into these, complicated or malignant cases are carried as soon as they develop. Perhaps I might better say that the isolation room is carried to the patient. For in many instances the little isolation rooms are portable, consisting merely of three partitions (one of which contains a door), high enough to reach the ceiling, and so constructed that they may be placed around a bed in such a way as to include one window for ventilation. The partitions are solid for about three feet from the floor; above this they are glazed just like an old style many-paned window or the roof of a hot-house. This arrangement permits plenty of light and air in the little room, and the isolated patient can be seen from the ward; moreover the ward is not darkened as would be the case without the use of glass. In the diphtheria pavilion I saw in these isolation rooms cases of malignant and laryngeal diphtheria, and a case with a doubtful rash. Before coming out from one of these small isolation rooms—of the second power we might call them—extra antiseptic precautions are taken. Antitoxin is the routine measure for treatment and prophylaxis, and I saw several intubated cases. The tubes used are various—O'Dwyers, and several modifications, and also different forms of introducers. Removing the tube by pressure with the thumb is a procedure which is very skillfully practised, but which is not without its dangers.

In the scarlet fever wards the most interesting thing I heard was the statement that they seldom find nephritis as a complication or sequel. This is attributed by Sevestre to the scrupulous cleansing of the mouth and pharynx, the idea being that the nephritis is due to a special streptococcus found in the mouth. But of course we know that French scarlatina is of a much milder type than ours.

Even in the medical wards care is taken to prevent the conveying of the different diseases from one patient to another. A device of Grancher is a sort of wire fence or screen around the bed employed in such cases as typhoid or pneumonia: this reminds the nurses that special antiseptic precautions are to be taken after handling the patient.

As regards infant feeding, the French physicians are only beginning to appreciate the advan-

tages of clean raw milk over sterilized and pasteurized milk. Most of the milk sold in Paris is sterilized; the rest is pasteurized. There is great need in Paris of a Milk Commission to raise the standard of the milk supply. Again the French physicians are not familiar with the principles and the advantages of percentage feeding. Perhaps this is due to the fact that wet-nurses are so easily obtained for their private patients. The substitute foods most in vogue are sterilized milk, either whole or slightly diluted, the lactated farinaceous foods, the maternized milks, the latterly—an importation from Holland and Germany—butter-milk boiled with flour gruel. It seems strange that notwithstanding the almost universal use of sterilized and starchy foods, so few cases of scurvy have been reported in France.

The attending physicians devote a great deal of time to their hospital work, both for the study of the cases and for the instruction of internes and students. I had the pleasure of making the rounds with Prof. Sevestre and with Prof. Marfan, men more conscientious in their work it would be impossible to find. Students are assigned to work up special cases in the wards; they make a thorough study and report to the Professor everything about the case, from history to cure or to postmortem findings. This lightens the work of the house staff, and adds interest to the student's work. Urine, blood bacteria, the various secretions and excretions are investigated in the pathological and chemical laboratories, which are usually in charge of a pathologist and physiological chemist. Some of the best work on the ferments and biological properties of human milk has been done in the laboratories of the children's hospitals of Paris.

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IMPRESSIONS OF THE NON-HEREDITY OF ACQUIRED CHARACTERS.

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AN article in a late number of the *MEDICAL NEWS* on the Non-Heridity of Acquired Characters by Mr. Irwell, a member of the legal profession of Buffalo, will undoubtedly elicit a large amount of interest and comment. While the members of the medical profession are not specialists in biology, they have for ages been engaged in the study and investigation of the science of life.

The heights they have reached and the convictions they have embraced and cogently expressed have taken deep root, and are not easily displaced by innovations which "have the smell of fire upon them."

It is extremely doubtful if the statement made by the author in question, "that physicians are unwilling to make themselves familiar with the subject of heredity," is susceptible of demonstration. In the study of morbid conditions it is natural to assume that heredity would and has commanded as much interest and attention as any

other factor in etiology. Jenner's discovery of vaccination by which he obtained financial recognition from the British government and immortal honor that will endure long after his monument in Trafalgar Square shall have crumbled into dust, in connection with the preventive and curative influence of lymph and the application of aseptic medication, present a potent argument against the correctness of this assertion. With the mental and physical degeneration arising from an indulgence in strong drink, in connection with the results of the signal strides of progressive medicine, there is a tendency at the present day, on the part of some of the younger members of the profession to lose sight of the grand achievements of the past, and satiate their pride by the glory of the present. This thought was presented in the *MEDICAL NEWS* some time since in an interesting and admirable article by Dr. Charles W. Dulles, at one time editor of *The Medical and Surgical Reporter*.

The reference to the statement of Dr. Wolf, that out of 600 Jewish boys, "two per cent. were born partially circumcised" seems irrelevant as proof of the influence of heredity. This ordinance was instituted by the Almighty in a covenant made with Abraham, and was simply an artificial observance, eliciting no greater anticipation than to expect that a woman whose leg had been amputated would have offspring with a single lower limb.

In the definition of the hereditary tendency by a noted writer and teacher we note that: "It is not diseases, generally speaking, that are inherited. It is only the peculiarities of structure or constitution which serve as predispositions to disease."

As the tendency of spirit drinking is to induce mental, moral and physical deterioration, we would naturally infer and assume, that the acquired habit in one generation would induce the same degeneration in the next; and evolve a hereditary condition. As heredity often overleaps one generation or manifests its influence in some psychoneurotic disease, it is difficult to say whether the alcoholic habit is hereditary or acquired.

The quotation from Dr. Adami's paper, which occurs in Mr. Irwell's article, states: "That alone is inherited which is the property of the individual, at the moment he becomes an individual, which is a property of the germ plasma from which he originates." This is certainly a truism, and accepted as a fact it seems perfectly plausible to assume that any element by which it was infected would be transmitted to the fetus, and in the case of syphilis on the part of either or both parents, would manifest its presence, as it has been revealed in the autopsy of a seven-months' fetus. Dr. Adami claims "there is no such thing as hereditary syphilis, yet admits the existence of congenital syphilis. To the average mind it is difficult to conceive of the existence of a congenital disease without recognizing its prenatal entity.

Dr. Paul Sollier of Paris ventilates his views of heredity in an exhaustive and interesting article in the first number of *Wood's Medical and Surgical Monographs*. The writer in his extensive researches has unfolded an immense amount of clinical evidence in support of his claims, and the searcher after literature on heredity will there find ample material to gratify his ambition. "In France," he says, "opinion appears to be almost unanimous as to the heredity of alcoholism."

The Academy of Medicine of Belgium has twice made the effects of habitual drunkenness on the progeny the subject of competitive essays. If this can be considered as an expression of the sentiment of that country we may assert that the medical profession there considers heredity one of the most powerful causes of alcoholism. The same opinion prevails in Germany.

But it is more particularly in England and America that alcoholism is considered a hereditary disease.

Crothers says: "Inebriety is positively transmitted from one generation to another."

In summing up his argument Mr. Irwell reaches the conclusion "that the acquired taste for alcohol is not transmitted to the next generation, but if it were, the Jews who have had alcohol for innumerable years would have been wiped out by its use. This is not so; indeed we Jews are an extremely sober people."

According to this theory the American nation is on the high road to extinction. The indicator however does not point in this direction, and the conclusion apparently reveals the falsity of the premise. Nevertheless, the statistics of the results of the drink habit unfold a fearful invasion of human life.

According to Darwin, "alcoholism is transmissible through three generations, and the families of drunkards die out at the fourth generation after having gradually sunk in the scale of degeneration, both physical and intellectual."

This statement is in accord with the decree of the Almighty, "visiting the iniquities of the fathers upon the children unto the third and fourth generation," and may be assumed as an expression of hereditary law.

After an expenditure of the highest intellectual energy, and after we have brought all the resources of science to the solution of this great problem, we approach the Delphic oracle of Mount Parnassus, and with Job exclaim: "Canst thou by searching find out God?"

MEDICAL PROGRESS.

SURGERY.

Ice Following Abdominal Section.—The proper use of ice may often prevent or control post-operative peritonitis, and its products and mortality correspondingly lessened. F. F. SIMPSON (Am. Gyn., Oct., 1902) bases this opinion on several hundred cases in which this treatment was clinically studied. The mortality hardly exceeded one per cent. After having seen so many grave cases yield to this method of treatment it

seemed to the author that, by beginning the use of the ice before the peritonitis had actually developed, it would be possible to prevent its occurrence. The results of this idea have been carried out and have given more than satisfactory results. Many complained at first of the weight of the ice, but when it was removed begged to have it put back. No injury to the skin has followed its use; and no depression of the general system has been observed. The healing of wounds has not been retarded by it. For the relief of pain (traumatic) one or two bags filled with ice over a thin dressing will usually suffice. But where a frank attack is feared or has set in, five or more bags should be employed. They should be separated from the skin only by a towel, a binder or a very thin gauze dressing. There are some few contraindications to its use. Cold should never be used to the exclusion of other well-known medical and surgical principles and measures. Formerly the author believed the post-operative kidney lesions were a contraindication to the use of ice, but from more recent experiments it is to be believed that if a serious peritonitis is to be feared extreme cold to the abdomen is far less harmful than the inflammation it prevents or checks. When grave post-operative peritonitis is to be feared or has set in, the author believes that there is no contraindication to the use of ice locally. When merely a slight traumatic reaction exists in the presence of a nephritis, a tendency to catarrhal enteritis, attacks which are precipitated by exposure to cold, and where rheumatic and bronchial attacks follow slight chilling, when the pain is due to a well-defined abscess with very little peritonitis, and when it is of intestinal origin, hot applications probably serve a better purpose. In conclusion the writer shows that in all his cases the local symptoms of inflammation subsided first, and that later the constitutional symptoms due to the absorption of poisons already produced, disappeared also.

Removal of the Urinary Bladder.—The two most important points in this operation are, says A. LAPHORN SMITH (Am. Gyn., Oct., 1902), first, how to get the bladder out, and second, what to do with the ureters? It is interesting to note that in Dr. Bovée's 100 cases, compiled from the literature, the ureters were engrafted into the bowel 31 times and together with that part of the bladder containing the ureteral valves, 44 times; into the urethra 13 times, into the vagina eight times and into the skin four times. The results of Peterson's experiments in dogs proved that transplantation of the ureters into the bowel is almost always followed by ascending infection and death. In man the mortality has also been high when the ureters have been grafted into the bowel; in 31 cases there were 13 deaths, seven of which were from ascending infection. The death-rate in malignant disease is over 50 per cent., but in exstrophy it is but 19 per cent., which would seem to indicate that if the malignancy were diagnosed earlier the operation would yield better results. The author's case was done for malignant tumor and resulted fatally. A modified Pawlik operation was performed. The patient had had intense pain and frequent micturition, and it was to relieve these disagreeable and distressing symptoms that the operation was performed. The ureters were first transplanted into the vagina and the urethra turned into the vagina and the vulva closed; the bladder was to be removed at some later time, about five or six weeks afterward. This method of operating has given two deaths in eight cases. The high death-rate should not discourage us when we remember that 25 years ago the mortality in hysterectomy was 75 per cent.

Kidney Diseases Causing Pyuria.—The surgery of the kidney has made such rapid progress during the

past few years that it is not at all uncommon now for an accurate diagnosis to be made of the kind and location of a suppurative process in one or both of the kidneys. This accuracy is almost entirely due to the carefulness in examination and the improved methods which have made more exact information possible. R. GUITÉRAS (Med. Rec., Nov. 8, 1902) divides the renal diseases accompanied by pyuria into pyelitis, pyonephrosis, suppurative nephritis and pyelonephritis. The first, pyelitis, is usually due to the extension of an inflammation from the lower urinary tract or to the presence of a stone. Pyonephrosis is a pyelitis accompanied by an obstruction in the pelvis or ureter giving rise to dilatation of the pelvis and calices of the kidney with pus, which gradually results in the destruction of the kidney itself. A suppurative nephritis is commonly of hematogenous origin, due to a pyemia or to a stone or tubercle in the renal tissue itself. Pyelonephritis is a condition best described as a combination of suppurative pyelitis and nephritis. Much information can be obtained from the history and physical examination, but a careful urinary analysis by a competent person, followed by a separation of the urines from the two kidneys is necessary to determine the exact nature of the lesion and to prognosticate the value of an operation. The simple presence of pus in the urine gives one no idea of its source and it is therefore necessary to rely upon the examination of other inflammatory products in the urine. Large numbers of epithelial cells are very helpful to an experienced eye, for the cells of the convoluted tubules, collecting tubules, pelvis, ureters, bladder and urethra can be differentiated. Casts are also very important aids in making out the nature of the disease. An acute process usually causes the formation of hyaline, epithelial and blood casts, while the granular, fatty and waxy casts mark a chronic nephritis. Pus-casts, *i.e.*, casts of any type studded with pus cells, or masses of mucus covered with pus cells, mean, as a rule, renal suppuration. The size of the cast has been used very ingeniously to tell the extension of the process. In order to make sure that the process is limited to one kidney and that the function of the other is normal, cystoscopy, ureteral catheterization, segregation of the urine from each kidney, the X-ray and exploratory incision may be employed. Nephrectomy is a serious operation and should never be advised unless all these methods have been employed and the diagnosis made as absolute as possible.

Radiotherapy in Cancer.—The cutaneous carcinoma presents the most favorable condition for the action of the X-ray and time has now shown that a large percentage of these growths may be cured by this method of treatment. In a series of 50 cases reported by C. W. ALLEN (Med. Rec., Nov. 15, 1902) in which 33 were of the cutaneous type, 26, or 52 per cent., were discharged as clinically cured, and ten were continuing the treatment with marked improvement. Even in breast cases, both primary and secondary, the results are certainly most gratifying. With our increased knowledge in the use of the X-ray there is promised a most efficient remedy for those otherwise fatal and oftentimes inoperable conditions.

Early Diagnosis of Cancer.—The fact that so many subjects of internal cases do not come under observation until too late for operative interference has led I. BOAS (Deut. med. Woch., Oct. 30, 1902) to propose a number of suggestions bearing on this matter. The Belgian government has lately issued public circulars bearing on the prophylaxis of venereal diseases, and in a similar manner he believes the public may be instructed in the early symptoms of cancer. Persons so affected could then apply to a physician at the first indication of symptoms, instead of wasting valuable time

in the treatment of supposed stomach troubles, hemorrhoids, etc. In the author's own experience of 54 cases of carcinoma of the rectum seen in the past six years, 80 per cent. were inoperable. The true condition had not been diagnosed in the overwhelming majority, although digital examinations had often been made. Moreover, in all suspicious cases, the patient should be admitted to a hospital for observation for several weeks, and returning after an interval, if any doubt existed. Not only would the public be benefited by such measures, but the students and physicians would acquire valuable training in the early recognition of carcinoma.

Radical Cure of Hernia.—The interest taken at the present day in the radical cure of hernia makes the publication of new methods and statistics of signal value. FRANK MARTIN (Phila. Med. Jour., Nov. 22, 1902) presents an analysis of 116 cases which he has operated and which present some features of interest. He considers general narcosis as preferable, but in four selected cases used spinal cocaine with success. Local anesthesia has also given good results, the skin infiltration with salt or Schleich solution being followed by "blocking" the ilio-inguinal and ilio-hypogastric nerves with one or two per cent. solution of cocaine. His method in 95 cases of inguinal hernia was similar to the Halstead operation, but internal oblique and transversalis muscles are not cut. The sac is tied off with fine silk continuous suture. Silver wire mattress sutures are employed to bring muscles, fascia and Poupart's ligament together, four below and one or two above the cord. Over these the aponeurosis of the external oblique is united by a continuous suture of silk. The skin is closed with a subcutaneous silver wire suture. The wound and groin are immobilized with light wooden splints and the patient kept in bed for three weeks. Primary union was secured in all but two cases. No recurrences were observed. In 73 cases of non-strangulated inguinal hernia no deaths occurred. In 22 strangulated cases, five deaths occurred, one from shock, the others from septic peritonitis. In two cases of non-strangulated femoral and five cases of non-strangulated umbilical hernia, the mortality was nil. In 10 cases of strangulated femoral and three of strangulated umbilical hernia, one death from peritonitis occurred in each variety.

Intestinal Occlusion Due to Tuberculous Peritonitis.—Surgical intervention in two cases of intestinal occlusion was practised by MONAD and CHAVANNAZ (La Presse Méd., Nov. 5, 1902) and in both cases the cause was found to be tuberculous peritonitis. The first patient, a woman of twenty-seven years, had a sudden attack of obstruction. Laparotomy revealed the presence of tuberculous granulations, disseminated about the pyloric region and surrounded by an area of marked hyperemia. No trace of mechanical obstruction was found; apparently the obstruction was due to intestinal paralysis. The second patient was an apparently healthy man of fifty years. The obstruction developed subacutely, suggesting neoplasm of the large intestine. Laparotomy was resorted to after two weeks of unsuccessful treatment. Marked ascites was present; the parietal peritoneum was abnormally vascular and the intestinal coils slightly adherent: the rectum and sigmoid were empty. The soft adhesions were readily broken up by digital manipulation. The patient was discharged convalescent two weeks after the operation, but succumbed to an acute peritonitis five months later. In this instance there were apparently two causes of obstruction: paralysis of the bowel, and adhesions. Exact diagnosis cannot be made before operation. Wherever the weakened condition of the patient does not contraindicate a prolonged operation and necessitate

the rapid performance of colostomy, median laparotomy should be done if tuberculous peritonitis is suspected. Laparotomy permits the removal of any cause of obstruction other than paralysis of the gut, and a further advantage in its favorable influence upon the course of the tuberculous peritonitis.

Six Cases of Rupture of the Intestine, with Four Recoveries.—A record of four recoveries in six cases of rupture of the intestine signifies prompt, efficient surgery. These cases are reported by F. B. LUND, E. H. NICHOLS and J. T. BOTTOMLEY (Bost. Med. and Surg. Jour., Nov. 27, 1902).—Prognosis apparently depends largely on the length of time allowed to elapse between the accident and the operation, for the two cases which were lost were operated upon latest, the delay in one case being 18 hours, and the other 20 hours. Beyond the fourth or fifth hour every hour of delay adds greatly to the danger of a fatal issue. These writers urge the importance of operating at once where there is reasonable suspicion of rupture. It will not do to wait until there are signs of certain perforation. In most cases exploration alone will give a definite diagnosis sufficiently early for successful surgical relief. Usually there is evidence of direct contusion of the anterior abdominal wall. One of Dr. Bottomley's cases is unique, for no such evidence was obtained. This patient was knocked down on a wharf, on a fairly even surface, presenting no projections. In this case the rupture was probably from within not from without. It is well known that perforation of the intestine in traumatic cases has occurred from within the bowel, the fluid contents of a loop of gut being confined for the time in a narrow space, and by the impact of the violence, being thrown into a state of tension sufficiently high to burst through the intestinal wall.

Perforation of the Bowel in Typhoid Fever.—No single complication of typhoid fever is more dreaded by the attending physician and more fatal to the patient than perforation of the bowel late in the third or during the fourth week. Regarding the surgical aspect of this question, G. E. ARMSTRONG (Ann. of Surg., Nov., 1902) makes the following statements: He feels that early diagnosis and operation are the two factors upon which one must depend to achieve greater success in saving the unfortunate victims of this deplorable and terribly fatal complication of enteric fever. The proposition that the sooner a hole in the intestine is closed the better can hardly be debated. As a general principle, it does not admit of argument. Granted certainty of diagnosis, the great argument against immediate operation is the presence of shock. In his own experience, marked shock generally indicated a large perforation, or at least the escape of a considerable quantity of contents from the gut into the peritoneal cavity. If the opening was small, intra-intestinal pressure was great, so that the total result was the same as if a larger opening obtained. To wait for shock to pass simply means the allowance of time for the spread of the infection and the development of a condition rendering subsequent cure more and more difficult. The aim should be to anticipate shock, and by so doing give aid while the infection is still confined to the narrowest possible area. In many cases there is a period of a few hours immediately following the perforation during which things seem to remain almost in statu quo. The tension within the bowel is momentarily relieved; sometimes the little opening is for the moment closed by a fringe of omentum or a friendly neighboring coil of intestine, and the condition only begins to increase after the intestinal tension is restored or a peristaltic wave has detached the tissue lying over the opening. This quiescent period is the

surgeon's opportunity. It is the operation's safety period, and when once passed, the dangers are greatly increased. Operations done at this time may possibly find a beginning peritonitis from infection through the still intact base of an ulcer. This base being found suspiciously thinned could then be enfolded and closed over by a row of sutures. That a localized infection may result from contagion through a thin and altered base of a typhoid ulcer is now generally admitted; and that even a fatal general peritonitis may result from such a base, and without macroscopical perforation is proved to be true by the Munich autopsies, where peritonitis was present without perforation in 2.2 per cent. of the cases. Recovery from perforation of the small intestine not closed by the surgeon is extremely uncommon. The experience gained by surgeons who have opened the abdomen and failed to find any perforation, although in some instances the symptoms present were fairly definite, has developed a doubt as to the correctness of the diagnosis in cases afterwards recovering without operation or abscess formation. This idea is put very strongly by Fitz in the following language: "Since perforation of the intestine in typhoid fever may take place without any suggestive symptoms, and since suggestive—even so-called characteristic—symptoms may occur without any perforation having taken place, it must be admitted that recovery from such symptoms is no satisfactory evidence of recovery from perforation." There is the best possible reason, then, for interfering, if the physician thinks a perforation has occurred, because by so doing he gives the patient the only chance there is of recovery. Operations in the past have been too frequently undertaken, not to close a perforation and to cleanse the limited area of infection, but to relieve as far as possible a developed more or less septic perforative peritonitis, the surgeon in such cases setting himself an almost impossible task. Experience in the sequelæ of appendicitis has taught him that the infection from the ileum is no less virulent than from the appendix, while the patient is in an infinitely less favorable condition to resist the general toxemia. A few cases of infection, limited and resulting in abscess formation, have been reported, some of them have recovered, some of them have died. To trust to the limitations of infection is a reckless attitude for the medical or surgical attendant to assume. He holds that early operation anticipates shock in most instances, anticipates perforation or rupture of a suppurating mesenteric gland in a few instances, and may be in time to relieve the conservative adhesion of omentum or other serous surface before it is forcibly separated by peristaltic or intra-intestinal pressure. He is sustained in this view by Mikulicz, who said at Magdeburg in 1884, "If suspicious of perforation, do not wait for an exact diagnosis and for peritonitis to develop to a pronounced degree, but, on the contrary, immediately proceed to an exploratory operation, which, in any case, is free from danger." Early operation should certainly save those that could get well without operation and some others that might be lost by delay.

Relapse in Congenital Dislocation of the Hip.—Successful reduction is generally possible in those under ten years, but some relapses after successful reduction may occur, writes E. H. BRADFORD (An. of Gyn. and Ped., Nov., 1902). Why a relapse should follow after the head has been well placed in an acetabulum of proper depth is not well understood. There may be anomalies in the shape of the head or of the socket but the usual causes are: (1) Folding of the capsule in the acetabulum before the reduced head; (2) insufficient stretching of the soft parts, especially in lower and inner portion of capsule; (3) relaxed condition of capsule and muscles,

including faulty attachment of the psoas; (4) twist in the neck of the femur. Such conditions should be corrected by the surgeon.

Drainage.—We have been playing battledore and shuttlecock with drainage for many years, but few of us have practised it with unvarying confidence from the beginning of our trying and painful experience in pelvic surgery, says JOSEPH PRICE (Am. Jour. of Obstet., Nov., 1902). The English and Continental operators of prominence, with long series of operations with low or "nil" mortality have all practised one or more methods of drainage, they have all recognized that, aside from the pleasing primary results, they have minimized post-operative resulting complications. A goodly number of operators, doing fairly good work by the suprapubic route, condemned or partially neglected drainage. Some of them never learned, and never will learn, how to handle drainage well. After abandoning the suprapubic route, they were placed in the uncomfortable position of admitting that drainage was doing what they had refused to obtain by suprapubic surgery. The operators doing suprapubic surgery in pelvic suppurations and all forms of appendicitis must possess 33 vertebrae. It is hard and complicated work; it requires and demands prolonged apprenticeship, as the surgery is important and the toilet extensive, and drainage always vital. You can save about everything with drainage, and the mortality will be large without it. The more progressive and successful specialist, doing painstaking operations in every detail, where filth or complications or adhesions were found to exist, practised most extensive sponge-packing or operative drainage. The modern operator does the same by his operative drainage or by his gauze pack or dry operation.

Rodent Ulcer of the Face, Tuberculous Adenitis and Pulmonary Tuberculosis.—The association of these three conditions in a case seen in B. AUCHÉ's (Jour. Méd. Bordeaux, Nov. 2, 1902) personal practice is made the subject of an interesting paper in which the author emphasizes the fact that notwithstanding the existence of the ulcer for a period of 20 years, there was no trace of epitheliomatous tissue in the cervical or submaxillary glands; this being regarded as an additional proof of the author's idea that epitheliomatous involvement of the ganglions is of rare occurrence in rodent ulcer. An illustration of the not infrequent association of tuberculosis and epithelioma is seen in the occurrence of tuberculous adenitis and pulmonary tuberculosis in the same patient coincident with the ulcer.

Surgical Treatment of Epilepsy.—Concerning surgery as applied to epilepsy, R. PARK (Am. Med. Nov. 22, 1902) states that epilepsy is the last disease which should be indiscriminately operated. In judiciously selected cases, radical operations of various kinds, suited to the individual needs of each case, have given far more satisfactory results than has non-operative or medicinal treatment. Every case must be studied as a problem by itself. The only general laws applying are those regarding the removal of peripheral or local foci of irritation and the destruction of paths of conduction which convey disturbing influences. In each case we must decide as to the operative method by which we may best meet these indications. In order to obtain the best results, patients should be seen early. It would be well to have every epileptic carefully studied by an accomplished surgeon, who should review the case with a view to the possibility of surgical intervention. Operation, when indicated and undertaken, should be regarded as a first measure, to be followed, and often preceded, by others, looking to a correction of all faults of diet, of elimination, etc. Long-continued attention to these matters is the price of eventual success. In those

cases characterized by blanching of the face, when the seizures can be warded off by amyl nitrite, the propriety of an excision of the cervical sympathetic may be considered.

Gastro-Enterostomy.—The flow of bile into the stomach along the proximal limb of the loop of jejunum, which is the means of anastomosing the stomach and small bowel in this operation, has constituted the great element of danger of this special procedure from the days when union between these viscera was first undertaken. With the view of checking all danger of this "viscous circle," as it is called, G. R. FOWLER (Ann. of Surg., Nov., 1902) had devised the following means and adopted it because it is not only adequate, but does not lengthen the procedure to any appreciable degree. It consists, in brief, of first securing a communication between a loop of the jejunum and the stomach, then an entero-enterostomy between the afferent and efferent portions of this loop, and finally, obliteration of the lumen of the afferent loop between the two points of anastomosis. He has selected the simplest and most rapid method of performing gastro-enterostomy, and added to it a procedure which occupies but a minute or two, and yet absolutely precludes the possibility of direct intra-communication between the stomach and the afferent loop. This step in the operation is accomplished by passing a No. 20 silver-wire two or three times around the afferent loop at the point selected, and drawing upon the turns sufficiently to occlude the lumen without strangulating the wall of the intestine. The ends are twisted together, cut short, and the ends rolled into a flat coil in such a manner as to bring the cut ends in the coil, thus guarding against subsequent injury to the surrounding structures.

Firm Traumatic Edema of the Back of the Hand and Feet.—It will be interesting for many surgeons to note a rare condition, apparently not previously described, which VULLIET (Cblatt f. Chir., Oct. 25, 1902) calls Hard Traumatic Edema of the Back of the Hands and Feet. It is caused, he says, by a distinctly localized blow upon the back of the hand, or by a rapid, violent dorsal flexion of the hand. It manifests itself in the early days by a swelling of the hand and foot dorsally, to the greatest degree around the bases of the fingers and toes. During such an establishment of this disease, the swelling is hard and elastic, but the impress of the finger does not remain, that is, there is no "pitting." The back of the hand is like an elastic cushion over which the skin cannot be seized or folded. There are no signs of inflammation and no ecchymosis. On the other hand, a free crepitus is palpable. The soles and the palms are normal, X-ray pictures showing the bones uninjured. Pressure is painful. Active and passive motion in the fingers is hindered and often very painful, chiefly in overextension. The thumb always escapes. The course and termination are of especial interest. To the physician who watches the case from beginning to end the swelling will be found resistant for a long time, sometimes for between eight and 12 weeks, sometimes longer. Then there is either a hard, well-defined mass or a softening over the bones, which may closely simulate an old injury, fracture, or chronic inflammation of the bones. Although the hand may be used before the swelling has entirely disappeared, it is perhaps better not to allow the patient to use it. The pathogenesis is not yet fully fixed, because direct examination of the anatomic-pathologic conditions is impossible. Perhaps there is a diffuse fibrous exudate between the true skin and the underlying parts, which is very slowly absorbed, and may indeed, in some cases, become organized and remain as a true fibrous thickening. The differential diagnosis lies between inflamma-

tory edema following infection, fracture of the metacarpal bones and subcutaneous hemorrhage. These three conditions are so well known that the points of differentiation need hardly be mentioned. The treatment consists solely in warm baths with pressure by bandages. Massage, strange as it may seem, appears to make the condition worse.

Hypertrophic Tuberculosis of the Intestine.—When tuberculosis invades the abdominal cavity, it usually attacks, for reasons not yet definitely fixed, the peritoneal lining of the cavity and covering of the viscera rather than the viscera themselves. A form, however, which invades the intestines, called hypertrophic tuberculosis of the intestines is described by H. F. HARRIS (Ann. of Surg., Nov., 1902) and its symptoms given in the following terms: The irregular character of the clinical manifestations of this affection makes it necessary to describe separately its peculiar features (a) during attacks when the patient suffers from the symptoms of intestinal obstruction and (b) the intervals between them. (a) The symptoms observed during the attacks have been very similar in all instances. Of these, colicky pains are the most frequent, occurring to a greater or less degree in all instances. In a considerable number of cases constipation has been observed during the beginning of the attack, this to be quickly followed by diarrhea; blood has been found a few times in the stools. During the attacks, borborygmi are almost invariably observed, there being often a very loud, gurgling noise, that can be heard at considerable distance from the patient. At these times the movements of the intestines may be easily felt, and, in many cases, clearly seen. Vomiting is also a symptom that is quite common, being in extreme cases fecal in character. The abdomen is commonly swollen, and palpation generally reveals the presence of a tumor which is in the region of the ileo-cecal valve in a majority of cases. These swellings offer considerable resistance to the hand, but are slightly movable, and are usually quite tender. In all cases where the disease is suspected the presence of a tumor is of great diagnostic importance, the clinical picture of the affection being incomplete without it. In addition to the symptoms that are more directly referable to the diseased intestine, anorexia, rapidity of the pulse, and irregular elevation of the temperature are quite common. In a number of instances the patients have suffered from pulmonary tuberculosis. As complications, hemorrhoids have been observed several times, two of the patients had floating kidneys, and convulsions have also been noted in one or two instances. (b) In the intervals between the attacks the patients may be in fairly good health, though in a vast majority of instances they suffer from digestive disturbances, sometimes accompanied by vomiting, and pains of a colicky character are frequently complained of. These pains may come on at intervals of months, or may be quite constant, and as the time is approached when a severe attack is beginning they may be almost continuous. At these periods constipation is the rule, but frequently alternates with diarrhea. Just before a severe attack, the abdominal tumor is generally quite pronounced. The symptoms may exist in a mild form for a long time without exciting suspicion on the part of the patient that he is suffering from a grave malady. In one instance, recorded by König, the disease had existed nine years before a physician was consulted. As far as the prognosis and treatment are concerned, he states that medical treatment can, of course, be of no avail in this malady, an operation being absolutely necessary in order to effect a cure, or even to prolong the patient's life. The statistics, as regards operative interference

are, upon the whole, encouraging—60 cases have been cured and four improved out of a total of 88 operated upon.

MEDICINE.

Meningococcus Septicemia.—Marx is inclined to regard epidemic cerebro-spinal meningitis due to the meningococcus of Weichselbaum, as a blood infection having the tonsils as point of entrance and the meninges as the microbic seat of election. Without accepting this view unqualifiedly, H. SALOMON (Berl. klin. Woch., Nov. 10, 1902) finds reason to believe that the infection is at least at times septicemic in character. Thus in a woman of thirty-two years who fell ill with chilly sensations, fever, dizziness, slight enlargement of the spleen and herpes labiales, there appeared after several days an eruption which strongly suggested a septic exanthem and led to a blood culture. Bouillon and agar cultures showed the presence of the meningococcus of Weichselbaum. A prolonged remittent fever followed, the ordinary daily fluctuation being from 36° to 40° C. During the third week a slight subconjunctival hemorrhage was noticed. The cutaneous eruption did not cease with the first impulse, but developed repeatedly new spots, macular, papular, petechial and in one or two places even pronouncedly hemorrhagic. General cutaneous hyperesthesia was a marked feature during the seventh week. During the eighth week epileptiform convulsions suddenly occurred. Stubborn attacks of vomiting now appeared and cervical rigidity for the first time became pronounced. Lumbar puncture during the ninth week showed an initial pressure of 280 to 300 mm. water; after removal of 20 c.c. of cerebro-spinal fluid the pressure fell to 100 mm. Microscopically the cloudy fluid obtained by puncture appeared rich in cells, and the meningococcus intracellularis was observed. The cervical rigidity was undiminished after puncture; opisthotonos developed, and twitching of the facial muscles was noticed. The patient complained chiefly of intolerable headache and frequent vomiting. During the tenth and eleventh weeks the temperature was not so high as previously; hallucinations occurred, with renewed cutaneous eruptions. Marantic edema was a later phenomenon. Notwithstanding the severity and long duration of the disease the patient was discharged in the fifth month of her disease, on the road to recovery. Salomon describes in detail the cultural experiments practised with the blood obtained from this case. The general features of the case resemble closely those of a case described by Osler, but in the latter case the patient died. Jäger cites cases in which the meningococcus was obtained from the spleen, kidneys, and pericardium, showing the existence of the bacterium in the general circulation. Perhaps the most interesting feature of Salomon's case is the fact that an examination of the blood showed the presence of the meningococcus many weeks before the germ established itself in its favorite locality; during the initial period of septicemia the development of meningitis was predicted and confidently awaited.

Recurrent Parotitis Following Recurrent Attacks of Appendicitis.—The association of parotitis with disease or derangement of the organs of generation is clinically familiar. Paget collected 101 cases of parotitis, and among these 18 were ascribed to disease of the alimentary tract. A case of parotitis described by D. F. JONES (Bost. Med. and Surg. Jour., Nov. 20, 1902) was apparently due to appendicitis. The patient was operated upon for appendicitis abscess ten days after the onset of symptoms. Two days later the left parotid became swollen and painful; these symptoms continued for five days and then subsided. The pa-

tient developed a second attack of appendicitis one year later. Again the abscess was drained, and 48 hours later the right parotid became painful and swollen, followed in two days by involvement of the left. A third attack of appendicitis occurred and the appendix this time was removed. The patient suffered a third attack of parotitis, involving both glands. The symptoms were comparatively mild; the temperature at its highest ranged between 100° and 101° F. Suppuration did not occur in this case; but it is of interest to note that of 78 cases, described by Paget, 45 went on to suppuration while only 33 resolved.

Primary New Growths of the Pleura.—On account of the rarity of this condition four cases have been reported by F. DELAFIELD (Med. Rec., Nov. 15, 1902). They are probably endothelial in origin, beginning in the lymphatics of the pleura. The cells are greatly increased in number and the lymphatics multiplied, so that we have innumerable tubules running through the growth filled with endothelial cells. The inflammatory changes in the pleura are so great, however, that the real character of the lesion is usually overlooked for a time. There is an exudation of fibrin and serum, the latter well marked, as a rule, and containing a little blood. The story of invasion, the behavior of the patient and the physical signs are those of pleurisy with effusion, but the bloody serum and low temperatures are suspicious. Later, the loss of strength and the rapid decline may lead to the correct diagnosis.

Effect of Roentgen Rays Upon Living Tissues.—Many suits for damages on account of X-ray burns have been instituted during the past few years and undoubtedly inexperience on the part of the manipulator has frequently been the cause of the unfortunate results. Sufficient information has now been obtained in regard to the action of these rays so that bad burns are even more inexcusable than previously and no one can now afford to attempt regular treatment with such an apparatus unless he is thoroughly familiar with the peculiarities and possibilities of this method of treatment and the idiosyncrasies of his patient. J. RUMS- JICINSKY (N. Y. Med. Jour., Nov. 15, 1902) has made a series of experiments upon guinea pigs to determine, if possible, the nature of this action and he has found a very strong electro-chemical agent which may even cause extensive degenerative changes in the entire gray matter along the posterior tracts. Microscopical examination of the destructive process, or "so-called burn" showed a special inflammatory process with a development of fibrous tissues, the walls of the blood vessels, especially the interior, were thickened and the lumina contracted. The superficial nerves were destroyed and thin layers of necrotic tissue were present. One possesses, therefore, in the X-ray a strong irritant which may deeply penetrate the tissues and produce changes which depend probably upon these factors: (1) the condition of the tissue cells, that is, the amount of resistance which the rays will encounter; (2) the amount and intensity of the rays, and (3) the character of the rays. It, therefore, happens that, since the cells of malignant growths and most abnormal processes possess less power of resistance than the normal cells, one may, by intelligent and systematic irritation, cause a specific electro-chemical inflammation which will result in degeneration, absorption and even total disappearance of malignant growths, often without any apparent sloughing. To protect healthy tissues lead is the safest and best guard and may be conveniently used in the form of tin-foil. This should be covered by a single layer of sheet rubber—on side of tube—to prevent the tin-foil from becoming charged with a current by induction. Satisfactory results cannot be obtained

unless the operator is thoroughly acquainted with the capacity of his apparatus and each individual tube. Each patient should be treated very carefully during the first two weeks to determine whether he possesses any idiosyncrasy to the rays. The length of exposure depends not so much on the time during which the tube is in action as on the actual time of best X-ray production as tested occasionally by the fluoroscope.

Acute Syphilitic Nephritis.—Several observers have noted that acute nephritis may occur as one of the earliest manifestation of a syphilitic infection. Another case is described by WALDVOGEL (Deut. med. Woch., Oct. 30, 1902) in which after three weeks, edema ascites and hydrothorax followed the appearance of condylomata and painful throat lesions. The urine was scanty, contained considerable albumin and numerous hyaline and granular casts. The patient, a man of thirty-one, was given daily inunctions with 5 gms. of blue ointment and the symptoms rapidly disappeared, the urine returning to the normal, after treatment had been continued for seven weeks.

Tetany in Gastric Disorders.—The relation of tetany to gastric disorders is discussed by L. W. STRONG (Bost. Med. and Surg. Jour., Nov. 27, 1902), who regards the condition of tetany as a symptom-complex, indicative of increased nervous irritability, probably central in location. The muscular spasm, affecting the arms in a characteristic manner, is the chief factor in diagnosis. The spasm is a reflex phenomenon, set loose by some mechanical stimulation, such as vomiting or lavage, with possibly a direct action in the case of pressure and of electrical stimulation of peripheral nerve trunks. The spasm cannot be produced without antecedent nervous irritability. The theory of intoxication has been advanced to explain the underlying nervous hyperirritability, but the etiology is not really known. Among the cases described by Strong, one ended fatally. In this patient a stomach-tube was introduced in a case of suspected carcinoma ventriculi; the spasm began while the tube was in situ, and the patient remained in a tetanic condition and died several hours later. The most complete descriptions of tetany are given by Continental writers. Frankl-Hochwart defines tetany as having as its chief symptom tonic, intermittent, bilateral, usually painful contractions, usually without alteration of consciousness, affecting chiefly the upper extremities, producing the writer's hand or obstetrician's hand, often affecting the lower extremities, less often the muscles of the larynx, face and jaw, while in single cases the bladder and diaphragm have been affected. Sensory symptoms occur mostly in the form of paresthesia and pain; the special senses are unaffected. Of special diagnostic value is the fact that, in the intervals, pressure in the brachial plexus starts the spasm (Trousseau's sign). Electric irritability for the galvanic current at least, is increased (Erb's phenomenon). Almost constant is mechanical hyperexcitability of the motor nerves (Chvostek's phenomenon). In the latent or "tetanoid" form spontaneous spasm is absent but Trousseau's, Erb's and Chvostek's signs are present. But Strong, after a review of the literature, insists that no symptom is of diagnostic value other than the characteristic muscular spasm of the arms.

Exophthalmic Goiter.—A case of this disease presenting some unusual features is reported by C. S. PORRIS (Phila. Med. Jour., Nov. 22, 1902). The patient, a coal-miner, aged thirty-nine, in addition to the usual symptoms, showed a marked ankle clonus, which disappeared as his condition improved, and suffered from attacks of either partial or complete unconsciousness, marked improvement following the use of sodium phosphate and the treatment of a chronic hypertrophic rhi-

nitis. This case seems to show that a well-developed ankle clonus may be present where there is no organic disease of the cord. The author does not believe that the clonus was of hysterical origin, but was due to some functional disturbance of the cord probably caused by the poison of the disease. The attacks of apparent unconsciousness seemed of the hysterical type as they were accompanied by other hysterical stigmata, i.e., reversal of the color fields. Two of the attacks, however, were attended with complete unconsciousness, which came on after undue exertion and were followed by more active symptoms of the disease. The improvement following the treatment of the nose and throat condition leads the author to suggest the routine examination of these localities in all cases of exophthalmic goiter.

Identity of Human and Bovine Tuberculosis.—Another contribution to the knowledge of this subject is made through the work of A. CIPOLLINA (Gazz. Osped., Nov. 9, 1902). In order to determine the possibility of infection with bovine tuberculosis through ingestion of infected milk, the author administered to a healthy monkey, in whom the tuberculin test was negative, daily portions of milk infected with bovine tuberculosis during a period of one month; at the end of which time the animal commenced to decline, lost flesh and developed a cough; and at the end of three months, died of tuberculosis. Autopsy showed a tuberculous peritonitis, tumefaction and caseation of the mesenteric glands, liver and spleen infiltrated with tuberculous nodules, the latter being much increased in size. A few superficial nodules were seen in the external coat of the gastro-intestinal tube, but the mucosa of both stomach and intestine was entirely normal with the exception of a few hemorrhagic spots in the colon corresponding to groups of mesenteric glands which had adhered to the intestinal wall. Some nodules were seen in the kidneys, and the lungs showed tuberculous infiltration. The author believes the experiment to be not without value in that it shows a generalized tuberculosis, the origin of which in infected milk is unquestionable, and that the tubercle bacillus may pass through the intestinal mucosa without giving rise to primary lesions in that locality.

The Diseases of Heart Muscle.—During the era of the rise of physical diagnosis, according to D. GERHARDT (Würrzb. Abhand., Vol. 3, No. 2) many a case of myocardial disease has, on account of a systolic murmur, been diagnosed as valvular disease and treated accordingly. Nowadays the subject of cardiac muscle is so much in the foreground that even the physical evidence of a valvular lesion appears to be of minor significance in the presence of a muscle affection. The conviction is gaining strength that in every case of valvular disease the condition of the heart muscle is the fact of greatest importance; that the prognosis and therapy depend more upon the capacity of the heart muscle than on the kind of valvular affection. Time has wrought many changes in the knowledge of the pathology of myocardial disease. According to the investigations of von Romberg, acute non-purulent myocarditis is more common than formerly supposed. It is found most frequently as a sequela of typhoid, scarlet fever and diphtheria. Greater emphasis is being made upon the interstitial changes, proliferation of leucocytes, formation of new connective tissue, particularly in the subpericardial and subendocardial tissues; the alterations in the parenchyma are recognized with much greater difficulty. It has also become doubtful whether fatty degeneration of the muscle-fibers represents an inflammation going hand in hand with functional disturbance of the contractile elements; Krehe has shown

by quantitative chemical analysis that the fatty content of muscularly strong hearts can be at least as large as that of muscularly weak ones belonging to the so-called category of fatty degeneration; moreover, Hersenfeld and Fenyvessy showed in experiments on animals that fatty degeneration following phosphorus poisoning leaves considerable reserve-force to the heart. A still greater blow has been struck, the old conception of chronic myocarditis. That form known as myocarditis fibrosa, which has been considered the type of chronic inflammation of the heart, is being removed more and more from the domain of inflammation to that of degeneration. With the exception of the rare cases of syphilitic new growths of the heart, there are to be easily recognized mural swellings appearing particularly in the left ventricle and septum, much more clearly circumscribed in the papillary muscles, almost always the result of deficient blood-supply accompanying disease of the nutrient arteries. On the other hand the Leipsig school sought to establish another form of myocarditis, mostly dependent on acute processes, which develops principally from acute interstitial myocarditis or takes its origin from inflammatory processes in the neighborhood, i.e., chronic endocarditis or pericarditis. Another comprehensive group of cases remains in which the clinical history points with great certainty to a heart disease, but in which autopsy reveals a dilated and often at the same time hypertrophied heart, without macroscopic or microscopic alteration of the cardiac musculature. The damage to the heart is easily recognized in the dilatation; yet how this results from the condition of the muscle can not be discovered. In the majority of cases accompanying this dilatation there is hypertrophy of the heart, sometimes equally on both sides, sometimes more on one, and sometimes on one side alone. In the cases of idiopathic hypertrophy it seems that the dilatation is the primary and the hypertrophy the secondary change. The fully developed clinical picture of all these cases presents the well-known symptom-complex of cardiac insufficiency—palpitation, dyspnea, cyanosis, hepatic enlargement, edema, ascites, anomalies of cardiac rhythm, increase (rarely decrease) in frequency of the beat, often arrhythmia, congestive bronchitis with pigmented cells in the sputum, predisposition to infarcts (more frequently in the lungs than in the greater circulation). Over the heart there is increased dullness, the apex is displaced outward and the pulsation is most frequently increased. The cardiac note is sometimes pure, sometimes accompanied by a systolic murmur; the aortic and pulmonic second sounds are often, in spite of an insufficiency of the ventricle, accentuated. In the majority of cases dyspnea and palpitation are the first symptoms; for a long time these are slight and gradual, sometimes only in the course of years, they increase until at last a stage is reached in which dressing or going about the room brings on dyspnea and palpitation. With the latter there occurs in most cases an increase in frequency of the beat. Swelling of the feet occurs at first at night, then continually. Catarrhal symptoms appear and finally there is presented the fully developed sad condition of cardiac insufficiency, in which the patient continually struggles for air and to which condition he at last succumbs. In other cases edema is the first symptom. Sometimes pleural effusion is the first symptom of cardiac weakness. In other cases the first symptoms are the congestive manifestation in the liver and digestive organs. Only in a small number of cases is congestion of the liver sufficient to produce symptoms from the beginning; in these there is a feeling of fulness and pressure after eating. The cases in which hepatic symptoms are the first, run a slow course with good prog-

noses. Of much graver significance is the sudden appearance of gastro-intestinal symptoms. Rarely dizziness is the first symptom of myocardial disease. Quite commonly with the first appearance of cardiac weakness there is a feeling of weakness and fatigue and the patients rapidly lose flesh. Relatively numerous are the cases in which the principal symptoms, dyspnea and palpitation, develop gradually out of the symptoms of simple bronchitis. To the group first described by Stokes belong the cases in which pneumonia, chronic bronchitis, and emphysema are combined with cardiac hypertrophy and dilatation, in which at autopsy one is in doubt as to whether the heart and the pulmonary disease are dependent on the same cause or whether one is dependent on the other. In contrast to all these gradually developing cases are those in which suddenly, while the patient is apparently in full health, an attack of severe distress opens the scene; sometimes it is urgent dyspnea, sometimes it is angina pectoris; most frequently it is a combination of the two. The cases of pure angina are unique, in that angina may be the only subjective symptom until death. The supposition that cardiac angina is the specific symptom of sclerosis of the coronary arteries, does not apply to this form. A sudden onset in apparent health occurs also in acute heart-strain. The latest writers deny the occurrence of acute cardiac dilatation in healthy hearts. The majority of cases of myocardial disease occur in the fourth and fifth decade; at this time arterio-sclerosis is the common cause, whether it affects the nutrition of the heart through the coronary arteries, or whether by general sclerosis of the systemic arteries it causes hypertrophy by increasing the work of the heart. The habitual use of alcohol is another great cause. Obesity and chronic diseases of the respiratory organs also lead to myocarditis. Hypertrophy of the heart as the result of continued overexertion is not as common as the earlier writings indicate; in considering the hypertrophy of lumbermen, blacksmiths, etc., the possible effect of alcohol cannot often be excluded. Relatively frequent are cardiac muscle diseases resulting from acute infectious diseases. In this connection particularly are diphtheria and influenza to be feared; the number of cases of cardiac insufficiency in the German Army increased markedly during an epidemic of influenza. Other causes of cardiac muscular affections are a general increase in the amount of blood, as indicated at autopsy by an abnormal vascularity of all the organs, and abnormal narrowness of the arterial system, as first taught by Virchow. The therapy of these diseases may be briefly stated. It includes careful hygiene, removal of the causative influences, restriction of alcohol, diminution of bodily exertion and rational obesity cures. The management differs not in general from that of other heart diseases. Light cases require rest, later methodical habituation to the former bodily tasks, above all absence of physical and psychical insults. The patient should cut down on alcohol, coffee and tobacco. Recently good results have been obtained from the use of simple, saline or carbonated baths and massage. Of medicaments digitalis is the best. The pharmacological experience that the digitalis preparations raise the blood-pressure has led many to formulate the rule that these drugs suffice only for those cases in which the blood-pressure is normal or lowered, but not for those in which it is raised. This last occurs (leaving nephritis out of the question) in cases of cardiac disturbance associated with arterio-sclerosis and in some cases of simple hypertrophy and dilatation. According to the author's local experience at Strassburg, this fundamental doubt as to the efficacy of digitalis in these cases is not borne out. Digitalis is recommended for all

forms of chronic cardiac disturbance. The author uses small doses, 0.1 to 0.3 grams per diem, which, without disadvantage, can be given for weeks at a time. Strophanthus has the same effects and indications. As efficacious as is digitalis in chronic cardiac disease, just so uncertain is its action in acute myocardial trouble. Cardiac weakness during and after infectious diseases is at any rate better fought with caffeine, camphor and alcohol. Digitalis is contraindicated in purely nervous cases. Together with digitalis, or in light forms instead of it, iodide of potash should be employed in cases complicated with arterio-sclerosis; particularly light forms of angina and cardiac asthma are seen to disappear under its use. Against all acute exacerbations as well as against the asthmatic difficulties, caffeine and camphor should be used. The edemas are combated with caffeine and the theobromine preparations.

Three Uncommon Cases of Poisoning.—From nine grams (about 2½ fluid drams) of fluid extract of hydrastis, FRIEDBERG (C'blatt f. Inn. Med., Oct. 18, 1902) saw burning in the stomach, and later nausea, dizziness and syncope. There was headache, delirium, oppression about the heart, dyspnea, and a few hours later vomiting of a dark-green thick liquid. There was also great weakness, pallor, some cyanosis, heart-sounds feeble, pulse 46, temperature 97° F. The uterus was enlarged, tender, the cervix slightly dilated, and there was some bleeding from the genitals. The patient recovered in five days. The second case is that of a man who, in mistake for whisky, took two swallows of petroleum. Burning in esophagus and stomach followed, and through the night the patient drank much water. In the morning he had headache, loss of appetite, diarrhea, and prostration, and everything tasted of crude petroleum. Two days later the breath and urine still smelt of petroleum, and there was an acute catarrhal condition of nose, throat and stomach. The odor and taste of petroleum continued to bother him till the sixth day, and then suddenly disappeared.

The third case, reported by R. NEUDÖRFFER (C'blatt f. Inn. Med., Oct. 4, 1902) occurred in a gardener's wife from handling the twigs of *Tsuga Douglasii* in the making of wreaths.

Giantism and Acromegaly.—There is a growing number of records which indicate that acromegaly not infrequently follows giant development or even a period of excessive growth. In either disease there is little if any sexual desire, and when they attack women menstruation ceases. Both giants and those with acromegaly suffer with analogous pains in the limbs, spine and viscera and are easily fatigued. Polyuria and glycosuria are common in acromegaly, but have not been much sought in giantism. Visual troubles and headache are common to both conditions. Giantism, however, is essentially a disease of adolescence, while acromegaly develops in mature persons only, so HENRY MEIGS (Arch. Générales de Méd., Oct., 1902) proposes the theory that there exists a condition due to excessive osteogenetic function, manifesting itself as giantism if the bones are still capable of lengthening, and as acromegaly if the epiphyses have become firmly united to their shafts. The cause of this perturbation of function can only be surmised at present, but certain it is that there is a marked relation between the osseous and genital development and that of the ductless glands, the thyroid in particular.

Malarial Ulcer of the Pharynx.—The patient of GALLÉ (Rusky Vrach, No. 41, 1902) was suffering for over two years from an ulcer of the pharynx. A general as well as microscopic examination of the secretion and small pieces of the local tissue showed ab-

sence of tuberculosis. There was no history of syphilis and the result of mercurial and iodide treatment was negative. Local treatment with different antiseptics, parachlorophenol and actinic light did not relieve the condition of the patient, until taking in consideration the fact, that the patient was previously suffering from malaria, Galler began to administer hypodermically quinine. In four weeks the ulcer healed. The author concludes that he had to deal undoubtedly with a case of a malarial ulcer of the pharynx and thinks it of great importance to always bear in mind that not only syphilitic and tubercular, but also malarial ulcers may appear in the pharynx.

Primary Tuberculosis of the Spleen.—The right diagnosis in this case was made only at the autopsy. The patient was brought to the hospital in a soporous condition and the physical examination revealed only an enlarged spleen and liver. Two days later the patient died. At the postmortem ROMANOFF (Russky Vrach, No. 41, 1902) found the spleen and liver covered with a large number of tubercles, which were microscopically perfectly typical and showed the presence of tubercle bacilli. As there was no sign of tuberculosis in any other organ and the tubercles in the spleen appeared a great deal older than in the liver, the author considers the case one of primary tuberculosis of the spleen, a diseased condition, which is extremely rare and not yet clinically defined.

HYGIENE.

Inefficiency of Fumigation.—All methods of fumigation have been discarded when formalin was introduced and almost absolute reliance was placed upon this. G. E. PFAHLER (Proc. of Path. Soc. of Phila., July, 1902) has, however, noticed epidemics of contagious diseases break out in the children's wards, which had been disinfected with formaldehyde gas, to which he could trace no contagion from the outside. He therefore tested the efficacy of a formalin candle which had been highly recommended. In the first experiment, culture of the staphylococcus pyogenes aureus were placed near the point of generation of the gas. All the cultures grew well. From the second experiment it was found that the ordinary germs found in rooms grew as well after fumigation as before. The same was the case when the gas was generated and passed through the key-hole for 13 hours. The fact that epidemics can be controlled seems to depend more upon the cleansing of the floor and walls than upon any gaseous disinfectant. Though formalin is the best disinfectant known, there is need for a more satisfactory method of application, which would mean an apparatus capable of generating the gas 10 times as fast or in more concentrated form.

Clinical Thermometer in Quarantine Inspection.—It has been found that a visual examination and a history from the patient are by no means always sufficient to detect mild or beginning cases of an infectious disease among passengers and crew of incoming vessels. The desire to deceive the officers at that time will make many patients appear temporarily well and furthermore the disease may be of such an insidious character that it is not recognized by the patient himself. A. H. DORV (Med. Rec., Nov. 1, 1902) has learned to rely largely upon the temperature which the person shows, for there can be very little deceit practised by the patient in vitiating this record, if proper precautions are taken by the physician. It is true that a person's temperature in ordinary health may vary considerably, depending upon the time of day, exercise or excitement, but it has been found after thousands of examinations that the temperature in health seldom goes below 97° F. or above 99.5° F. If a passenger on a vessel from

a suspected port shows a temperature above 99.5° F. he is sent to the detention hospital for further observation, and although some are able to leave within a day or so, having shown no further developments, yet this seems to be a reasonable and valuable limit.

THERAPEUTICS.

Serum Therapy.—Under this heading M. ZUNIGA (Gac. Méd. de Costa Rica, VI, No. 12, 1902) sets forth the merits of sodium bromide and gelatin, combined with artificial saline serum, as applied to obstetric practice. He has found sodium bromide, administered hypodermatically in the proportion of sodium bromide 5 gms., artificial saline serum (10 in 1,000) 500 gms., most serviceable for the control of pain in parturition, and for abortion of eclampsia. The use of gelatin for the control of hemorrhage has given good results in his hands; and in those cases in which the history points to probable hemorrhage during parturition, as in albuminuric or hemophilic cases, the author makes foods, of which gelatin is the basis, the chief part of the diet during the last two weeks of pregnancy; and when labor sets in, he gives a hypodermic of gelatin 25 gms., artificial saline serum (10 in 1,000) 500 gms. By this means, postpartum hemorrhage has been averted in those who had so suffered in previous pregnancies. The gelatin serum, with a small amount of carbolic acid, is also used by Zuniga, as a hot intra-uterine douche (five per cent.) when postpartum hemorrhage does occur; the douche being followed by a vaginal packing of cotton saturated with the gelatin serum.

Enuresis and Silver Nitrate.—Success has attended the instillation of silver nitrate in the urethra by C. DELFOSSE (Jour. Sci. Méd. de Lille, Nov. 1, 1902) in several cases of nocturnal enuresis, which failed to respond to the belladonna treatment. After preliminary lavage, 10 drops of silver nitrate (one in 30) were used; the amount being increased to 15 or 20 drops in those cases in which a second application was necessary. A third treatment was required in but one case.

Scalvo's Serum and Malignant Pustule.—Favorable results are reported by F. MELONI (Gazz. Osped., Oct. 26, 1902) from the use of this serum in two cases of malignant pustule, in which other remedies had failed of effect. Subcutaneous injection of 40 and 50 cm. of the serum brought about prompt amelioration and subsequent cure in both cases, which had shown the gravest symptoms.

Concerning Adrenalin.—In ophthalmological work adrenalin chloride has proved a valuable remedy in E. LOPEZ's (Rev. Méd. Cubana, Nov. 1, 1902) experience. In cases of injected conjunctiva, the doctor states that upon instillation of one drop of adrenalin chloride (1 in 1,000) the eye at once regains its normal appearance. The hemostatic property of the substance has proven most valuable in operative work, including operations for pterygium, small palpebral tumors, iridectomy for glaucoma and enucleation of the eye under chloroform; little or no hemorrhage occurring when adrenalin is used. For patients' own use in congestive affections of the eye, the author prescribes an eye-wash of adrenalin chloride, one in 5,000, or in severe cases, one in 2,000, four times daily. Its application to the mucosa is devoid of pain or discomfort.

Comparative Effects of Iodothyrene and Electricity in Raynaud's Disease.—Two cases subjected to thyroid treatment and subsequently successfully treated with the continuous electric current as Raynaud advises, are reported by BALTUS (Jour. Sci. Méd. de Lille, Nov. 8, 1902), in one of which thyroid treatment produced no effect and but a transitory effect in the other. Treatment by electricity is therefore deemed the only desirable method.

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SATURDAY, DECEMBER 20, 1902.

INTERNATIONAL AGREEMENT ON THE PREPARATION OF POWERFUL DRUGS.

THE desirability of unifying the various national pharmacopœias, at least so far as concerns powerful and dangerous drugs in international use, has long been recognized. Such unification was proposed by an international body of pharmacists which met in Paris in 1867, and the scheme has repeatedly received the sanction of similar bodies in later years. It remained for the enlightened government of Belgium, acting at the request of the Belgian Royal Academy of Medicine, to influence nearly all the governments of the civilized world to participate in a conference which had for its object a larger degree of pharmacopœial uniformity. This conference was held in Brussels a few weeks ago.

Anyone who has taken part in a gathering of this character will appreciate the obstacles which confronted the Brussels Conference. Pharmaceutical habits give rise to methods of thought which become as fixed as the everlasting hills and ordinarily one would expect nothing less than a mental earthquake to dislodge them. And the National Pharmacopœia—in every country except our own a governmental institution—what a bulwark against dangerous fraud, what a fount of conservative orthodoxy! Yet the Brus-

sels Conference, thanks to the admirable preparatory work of the Belgian Minister of Agriculture and Hygiene, and to the conciliatory spirit of the delegates present, was able to reach a number of important agreements, which will be embodied in the next edition of the pharmacopœias of 19 countries.

The Conference really began its work last spring, at which time Belgium submitted to each of the governments, which had expressed itself in favor of an *entente*, a list of the drugs the preparation of which seemed worthy of the attention of the Conference, together with a proposed international formula. These proposals only touched the more powerful drugs in international use, such as aconite, belladonna, colchicum, cannabis indica, digitalis, ipecac, hyoscyamus, nux vomica, opium, etc.; the provisional list comprised 72 preparations, but the number ultimately considered for unification was 42.

An initial difficulty arose on account of the fact that whereas in the pharmacopœia of England and that of the United States, the proportions of the substances entering into the composition of preparations are expressed in volume, in all other pharmacopœias weights are given. The Conference accepted the suggestion of Mr. MacAlister, a British delegate, that hereafter, whenever a quantity of liquid is expressed in volume, a volume shall be chosen which exactly corresponds to the weight of such substance as indicated in other pharmacopœias. Thus, whatever the mode of expression, the proportions of ingredients will be identical.

No agreement was arrived at concerning the dosage of active principles of drugs. The Swiss delegates proposed that the Conference adopt a fixed analytic method for the determination of dosage, but it appeared that various methods were in vogue in the different countries, and a comparative study of these methods could not be undertaken in the time at the disposal of the Conference. No agreement was reached, either, as to the manner in which the formulæ adopted by the Conference are to be incorporated in the several national publications; each country will determine for itself whether the revised international formulæ shall appear in the body of its pharmacopœia or in a supplement. The Conference decided that 70 per cent. alcohol is to be used hereafter in the preparation of tinctures of the heroic drugs; at present various strengths are given for different groups of tinctures even in a single pharmacopœia. Official opium is to

contain, after a certain degree of desiccation, 10 parts of morphine per 100; any opium having this strength will be acceptable in pharmacy, and not merely the opium obtained from Asia-Minor, as proposed by certain delegates.

These few citations will suffice to indicate the nature of the decisions of the Brussels Conference. It is evident that an important reform has been inaugurated and that subsequent meetings to extend and perfect the work now fairly begun, will be more readily effected and easier to control. For his skilful, unostentatious and successful labor in this connection the Belgian Minister of Agriculture and Hygiene, M. van der Bruggen, deserves the thanks of the medical fraternity.

PRESIDENT ELIOT ON EDUCATIONAL NEEDS.

SO PREEMINENTLY important is public education as a problem not only of economics, but quite as well of human happiness, that every authoritative, competent utterance on the subject is apt to be of exceptional general interest. President Eliot of Harvard University, as he has done before, expresses educational ideas which seem to be the highest obtainable wisdom on this phase of our current civilization. The address containing these timely propositions and entitled "The Needs of American Public Education," was delivered before the Rhode Island Institute of Instruction late in October last, and has been much quoted and discussed in our recent periodical literature, and certainly widely read by thinking men and women. There are certain suggestions contained in the address, however, which, because of their nature, merit special notice by members of the medical profession,—naturally the great teacher, always, of mankind.

President Eliot evidently realizes well what medically educated people have long recognized, that the average school-house, even in the wealthy cities, is not as healthful a place as it should be with our knowledge of physiology and bacteriology. The tax-paying public learns some things so slowly, although some other things so fast! Attention is called to the need of requiring that the woodwork in school-buildings should be reduced to a minimum, because more porous and less easily cleaned than other materials, and what is necessary "should be carefully constructed with reference to the facility of keeping it clean, just as the woodwork in the interior of a modern hospital is constructed." The inner walls of schools should not be absorbent, but, on the contrary, should resist both

moisture and gases, and be capable of thorough cleansing, as should also the entire heating apparatus for school-buildings. "All flues, ducts, and boxes for the reception and conveyance of cold or hot air should be so built and disposed that their interiors can be cleaned." Large school-house yards are also urged, for cities, especially where fresh air and space for exercise are apt to be limited. These suggestions, though not new, need frequent repetition until they be acted upon by school-boards to the public benefit.

But an important proposal is made which, if not strictly new, is practically new so far as most places are concerned, namely that every large school demands the services of a skilled physician, to be connected with the school as a medical superintendent. His sole duty it should be, says President Eliot, "to watch for contagious disease, to prevent the too early return to school of children who have suffered from such diseases, to take thought of the eyes of the children lest they be injured in reading or writing by bad postures or bad light, to advise concerning the correction of remediable bodily defects in any of the children under his supervision, to give advice at the homes about the diet and sleep of the children whose nutrition is visibly defective, and, in short, to be the protector, counselor and friend of the children and their parents with regard to health, normal growth, and the preservation of all the senses in good condition. Such medical supervision of school children would be costly, but it would be the most rewarding school expenditure that a community could make, even from the industrial or commercial point of view, since nothing impairs the well-being and productiveness of a community so much as sickness and premature disability and death.

"As in an individual, so in a nation, health and strength are the foundations of productiveness and prosperity." This is good sense, good pedagogy, good economics, and would lead to great general benefit, not the least source of which would be that it would rapidly bring about the instruction of the people at large in hygiene and the broader principles of preventive and therapeutic medicine. Such appointments would provide competent physicians who would have a strong sense of responsibility for the welfare of a limited number of persons, thus allowing of actual and important benefits to those who most need this sort of care. The proposition cannot be met by the profession with too great welcome, both for the public good and for their own.

Other recommendations by this competent adviser are for better teachers and more of them; more outdoor instruction, for example, in geography and natural history; a pension for superannuated teachers; better superintendents; election of studies for pupils down to nine years old; more manual training, more drawing, more music; and a wide extension of the important and very useful vacation-schools.

All these things would require large additional expenditure of the public funds and what would justify this? In answering at convincing length this vital question, a question every tax-payer will vociferously ask, President Eliot goes easily into economics and shows thereby conclusively that education, the finest to be had, is *the very best investment any body politic can make*; that every dollar expended on the practicable education of a citizen returns many fold to him and to the State in earning capacity and in his value as an actual asset of his race. Add to this the additional happiness provided to the individual and the balance in favor is infinitely greater still. To promulgate and to strongly support such obviously wise suggestions is the physician's present privilege.

TYPHOID FEVER IN CHILDREN.

It seems to be very generally conceded now that typhoid fever may not only occur in children of tender years, but that the only reason why it is not noted so frequently as in adults is that infants are usually protected from the contagion by the greater care exercised with regard to the boiling, or at least pasteurizing, of all food and drink prepared for them.

Nursing infants are especially protected from the entrance of the germs of the disease, although it seems possible that these children are, if the mother has had typhoid fever within 10 years, rendered somewhat immune to the disease by the presence in the milk of certain protective substances derived from the immune maternal tissues. Ehrlich pointed out, some three years ago, that nursing guinea-pigs and rabbits do acquire, through the milk, a temporary immunity to certain diseases, with regard to which the mother had been rendered immune by gradually increased inoculations of virulent material. Abbott suggested, at the meeting of the Association of American Physicians two years ago, that this law probably applied to nursing infants also and accounted for the rarity of most infectious diseases, during the nursing period, on the principle of acquired immunity in the mother being temporarily passed

on in the milk. This explanation is now accepted by all the best authorities in pathology and immunity.

In the Huxley Lecture on Immunity (see MEDICAL NEWS, Oct. 18, p. 734) Prof. Welch said that "It is an important function of the mother to transfer to the suckling through her milk immunizing bodies, and the infant's stomach has the capacity, which is afterward lost, of absorbing these substances in an active state. The relative richness of the suckling's blood in protective antibodies, as contrasted with the artificially fed infant, explains the greater freedom of the former from infectious diseases." These conclusions emphasize the necessity for advising mothers, as far as possible, to give their infants the opportunity to take advantage of all the protective qualities that they themselves have acquired by the costly experience of passing through infectious diseases. During an epidemic of typhoid fever especially (although this holds also, of course, for all other epidemics of infectious diseases) mothers should be advised not to wean their infants, since it will distinctly add to the danger of the acquisition of the infection.

With regard to the diagnosis of typhoid fever in children, the introduction of the Widal test has removed most of the difficulty. It is the general employment of this test in our large cities that has brought about the conviction that typhoid fever is not so infrequent, even in very young children, as was thought. The agglutination reaction is, especially in children, sometimes delayed until late in the affection and this may throw a veil of uncertainty over the absolute diagnosis, but in the very large majority of cases the test proves positive during the first eight days of the illness. In a certain number of cases, running a clinical course so like typhoid fever as to be very justifiably mistaken for it, the Widal test has proved persistently negative in adults as well as children. It has been the custom to class these cases as true typhoid fever, with the agglutinative power of the serum anomalously absent. A very definite impression is gaining ground now, however, that these cases are not genuine typhoid, but paratyphoid affections, due to a bacillus not unlike the Gaffky-Eberth bacillus, but distinct from it. This micro-organism is capable of producing an agglutinative property for its own cultures in the blood of the patient but not for those of other bacilli, even though they may seem to be closely related to it, by morphology at least.

The treatment of typhoid fever in the child

is very much simplified by the fact that liquid diet serves much better than in the adult to keep up the strength, and this is after all the important element in prognosis as regards eventual mortality or the liability to complications. The temperature of typhoid fever in the very young is apt to be higher than in the adult, but there is the advantage that it is much more easily influenced by antipyretic measures. The full bath is seldom required and in fact needs to be watched carefully when used since subnormal temperature may be readily induced. Nervous symptoms develop more frequently in children and are more persistently bothersome. Antipyretic drugs are nearly always indicated for typhoid fever in children because they overcome the restlessness and prevent delirium. Children, even more than adults, when suffering from the disease must not be left alone, for they are very prone to get out of bed and expose themselves to sudden chilling of the body and to the danger of intestinal complications by excessive movement. During the first days of defervescence special precautions must be instituted in order to prevent children from obtaining unsuitable food surreptitiously. Their craving for food is often so great as to make their pleading irresistible. Mothers especially need the most absolute directions not to yield to their little patients. If any food is left where children can possibly get at it they will prove most ingenious to secure it.

In the case of children the need of the most stringent prophylactic regulations is obvious, if the spread of the disease is to be prevented. Children, even up to the age of six or seven, are liable to be uncleanly in their personal habits during the continuance of fever. The greatest care must be exercised then to prevent the dissemination of infectious material. This is especially true with regard to the urine. Most young children will need to use a diaper, or at least some extra clothing meant to prevent the soiling of the bedding around the loins. It is now a well-established fact that the urine of typhoid patients practically always contains virulent typhoid bacilli. There is much less repugnance, as a rule, to the handling of children's excretions and so ample opportunities may be provided for the contamination of the hands of attendants with infectious material. Mothers and nurses, then, must be warned specifically of the dangers involved and the most scrupulous cleanliness must be insisted on. All cloths that have been in contact with the patient, no matter how

apparently little soiled, must be placed in a strong antiseptic solution or thoroughly boiled before being handled by those who are not in immediate attendance on the sick-room.

The complication most frequent in children is severe typhoid bronchitis. This may even take on the character of a broncho-pneumonia. It is more frequent in hospital practice than among private patients and is evidently dependent to a considerable extent on the purity of the air breathed. It is much more important that the air of the sick-room should be frequently changed than that it should be kept at an invariable temperature. The bronchitis is due not to catching cold but to the specific action of typhoid bacilli upon pulmonary tissues reduced in vitality; careful and minute directions must therefore be given for the airing of the sick-room. Cold air will no more harm the patient while in a fever than will the cold bath, though the effect of both must be watched carefully so as to avoid any tendency to collapse. The fresh outer air may be used as an antipyretic with proper management and it will serve as the best prophylactic against pulmonary complications, or any subsequent development of tuberculosis which is sometimes a dreaded sequel of typhoid fever.

ECHOES AND NEWS.

NEW YORK.

Appointment of Dr. Leszynsky.—Dr. William M. Leszynsky has been appointed Neurologist to the Lebanon Hospital.

Academy of Medicine.—The following officers were elected last week: President, Andrew H. Smith, M.D.; vice-president, M. Allen Starr, M.D.; treasurer, Herman L. Collyer, M.D.; trustee, Arthur M. Jacobus, M.D.; member of the Committee on Admissions, J. Milton Mabbott, M.D.; member of the Committee on Library, Joseph Collins, M.D.

New York Neurological Society.—The election of officers resulted as follows: Dr. Pearce Bailey, president; Dr. J. Arthur Booth, first vice-president; Dr. Frederick Peterson, second vice-president; Dr. B. Onuf, recording secretary; Dr. F. K. Hallock, corresponding secretary, and Dr. G. M. Hammond, treasurer.

Clinic for the Treatment of Trachoma.—At the request of Commissioner Lederle of the Department of Health, the trustees of Bellevue and Allied Hospitals are preparing to establish a clinic for the treatment of trachoma. This disease is prevalent among the school children of the city, and there is at present no city hospital with the facilities for its treatment. The various private hospitals of the city, devoted to the treatment of the diseases of the eye, are overwhelmed with the number of cases that come to them for treatment, having been excluded from the schools by the inspectors of the Health Department. These institutions also, are for the most part, unprovided with wards in which the patients may be kept over night after they have

undergone operation. The operation usually practised consists in scarifying the lids, and calls for the use of anesthetics. The trustees have taken the old building of the Gouverneur Hospital, which is now in use as a dormitory, and have fitted up the first floor and part of the second for the treatment of these cases. There will be the usual waiting room, operating room, recovery room and a ward for each of the sexes in which the patients may be kept for from 12 to 24 hours. This work is looked upon as in the nature of an emergency and it is believed that by vigorous measures now, the disease may be brought under control within a few months. The clinic will be opened in the course of the coming week.

Resolutions Concerning Dr. Reed.—At a stated meeting of the New York Academy of Medicine, held Dec. 3, 1902, the following resolution was unanimously voted: Whereas in the recent death of Dr. Walter Reed, Major Surgeon U.S.A., the science of medicine has lost the one whose brilliant research led first to the demonstration of the transmission of yellow fever by the mosquito and later to the practical removal of the disease from a large part of Cuba and the prevention of its transmission to the shores of this country. Be it resolved that the New York Academy of Medicine records its sense of the greatness of the loss to science and to mankind and its sympathy with the friends and relatives of the deceased.

Gift to Seney Hospital.—William Halls, Jr., vice-president of the Hanover Bank, at the Crystal anniversary dinner of the Seney Hospital, held at the Montauk Club, announced: "If by June 1, 1903, the sum of \$50,000 is raised in *bona fide* subscriptions, payable in a reasonable time after that date, to cover the building debt, the current expenses deficiency and provide, say \$15,000 on account of 1903 expenses to obviate a deficiency that year and bring the endowment fund up to at least \$850,000, my wife and I will complete the buildings and grounds up to a cost of \$125,000."

Blackwell's Island Diet.—There is to be a change of diet for those who are dwelling on Blackwell's Island in the various institutions there. It was brought to the attention of Commissioner Folks of the Department of Charities that the people of the island were suffering from a surfeit of beef. The Charities Commissioner recently tried a new diet on the people of the island. They were given "pork and beans with coffee in the dark." Other experiments in the way of milk, butter, and eggs were made with equal success. Commissioner Folks announced also that he had appointed Miss Florence R. Corbett, the Chief Dietitian in the Kings County Hospital, as his assistant and general adviser in the purchase, distribution, cooking, and serving of food in the Charities Department. She will take office Jan. 1, 1903, at a salary of \$1,000 a year. In speaking of the appointment, the Commissioner said that during his investigations in the department he had discovered that there was a scarcity of variety in the foods served. He thinks that too much beef is served in some instances and not enough of vegetables, milk, butter, and eggs. Miss Corbett is a graduate of the Kansas State Agricultural College, and has studied in the Pratt Institute of Brooklyn. For three years she had charge of the Dietary Department of the Elizabeth (N. J.) General Hospital, which position she resigned to accept one with the Kings County Hospital.

Manhattan Dermatological Society.—Regular meeting held Friday evening, Dec. 5, 1902, Dr. Gottheil presiding.

Dr. Edw. Pisko presented a woman of forty years with xanthoma tuberosum diabetorum. The moniliform type shows well on the flexor surfaces of elbows

and knees; the papular variety scattered generally all over the body and some on scalp and the nodular tumor masses on back of hands and feet. She was first seen last August, when urine showed 5 per cent. of sugar; after six weeks' treatment on opium, two grains per day and a restricted diet, sugar reduced to $\frac{4}{10}$ per cent. About 18 months ago eruption disappeared spontaneously and skin remained clear for eight weeks. At no time were the eyelids involved. Duration of disease six years.

Dr. Leviser had seen three cases; none showed the moniliform arrangement; he recognized three varieties of this affection: (a) xanthoma palpebrarum (non-diabetic), (b) xanthoma tuberosum (diabetic), (c) xanthoma tuberosum (non-diabetic), the latter extremely rare. The treatment of the eruption was the general treatment of the accompanying diabetes.

Dr. J. Sobel said it was the first of its kind he had seen; it was hard to explain why the eyelids escaped; the pain he attributes to sensory neuritis, a complication of the diabetic condition. Dr. Gottheil stated that xanthoma palpebrarum was a distinct affection and usually non-diabetic; it resembled true xanthoma diabetorum in color only. Never saw the moniliform type before. Dr. Weiss, Oberndorfer and Cocks said the condition as here shown was very rare; they would be pleased to hear subsequent reports on the case.

Dr. I. P. Oberndorfer presented a case for diagnosis: history, male, had a lesion on penis six weeks ago; cauterized by a local physician at that time. Also had gonorrhea then. At present lesion shows a faint trace of induration; inguinal glands apparently not enlarged, the body shows a distinct macular eruption. Dr. Oberndorfer thought of a copaiiba eruption (taken for gonorrhea) a non-luetic eruption, which he could not classify, or a roseola following a non-indurated chancre.

Dr. R. Abrahams saw no inguinal adenitis and excluded syphilis; many soft chancres become indurated after caustic applications. Eruption nevertheless suspicious; the chancre, probably a soft one, and eruption accidental. Dr. Wolff considers it specific. Dr. Pisko thinks we have to deal with a parchment chancre and roseola.

Dr. Bleiman said that the patient should be given benefit of doubt and treated for syphilis, the history and the clinical appearance favor such a diagnosis. Dr. L. Weiss said that clinically he would favor the diagnosis of lues. Dr. Cocks called it a dermatitis; the chancre a soft one. Drs. Geyser and Kinch call it lues. Drs. Sobel and Gottheil stated it was difficult to differentiate between hard and soft chancres in the early stage. Some true chancres lacked induration, and soft ones often became indurated after harsh treatment. Regard the case as specific.

Dr. W. S. Gottheil presented a woman of sixty years with diagnosis of atrophie propria cutis (beginning process). There was thinning of cutis from knee to ankle (right) with patches of atrophy; the lower half of thigh hyperemic and margins of this area sharply defined; veins of lower limb prominent and varicose; process began 18 years ago. Dr. Abrahams recognized the resemblance to his case presented to the Society recently and agreed in the diagnosis. Drs. Pisko and Bleiman stated that this condition was seen in long-standing cases of varix (Pisko). The question to decide was, whether varicosities or atrophy was the primary lesion (Bleiman). Dr. L. Weiss said that the thinning of skin, dryness without desquamation and glossiness speak for diagnosis of atrophie propria cutis. Drs. Cocks, Oberndorfer and Geyser accept the diagnosis of atrophy. Dr. Gottheil showed microscopical sections from Dr. Abrahams' case of atrophie propria cutis.

Dr. Levisseur presented a case of lupus vulgaris to show result of treatment by introduction of negative needle of a galvanic current, with two to four milliamperes and 28 voltage. He used potassium iodide for a time without result. Finsen therapy was inaugurated; 55 sittings in all were given; three sittings per week; patient not benefited; recrudescence took place upon three different occasions, but always responded to electrolysis. He believed that an antitoxin was produced which attacked the diseased areas. The patient likewise showed enlarged cervical tubercular glands. Dr. Abrahams was skeptical as to the results with the X-ray and electrolytic action. Believing that electrolysis was a process of tissue destruction he would expect somewhat similar results from the use of alcohol injections. He recommends the internal use of urea and reported a case of lupus with pulmonary involvement doing well on this line of treatment. Dr. Cocks was certain he saw good results from X-ray therapy. Dr. Oberndorfer was inclined to accept the antitoxic theory advanced by Dr. Levisseur, although not prepared to state whether the action was antitoxic, chemical or destructive. Dr. Geyser spoke of the advantages of low voltage. Dr. L. Weiss compared the old and new methods of treatment and claimed results for both. Dr. Gottheil believed the failure to affect a cure in this case was probably due to faulty technic; some cases are exceedingly rebellious, but the large majority do well under Finsen light treatment.

Newly elected officers for 1903: Dr. Ludwig Weiss, 77 E. Ninety-first street, president; Dr. Jacob Sobel, 1828 Madison avenue, vice-president; Dr. Asher Bleiman, 206 E. Forty-eighth street, secretary and treasurer.

PHILADELPHIA.

Hospital of University of Pennsylvania to be Enlarged.—Plans involving an outlay of \$300,000 are being prepared for the enlargement and improvement of the hospital of the University of Pennsylvania. When the projected changes are made the capacity of the institution will be nearly double that of the present. The architectural appearance of the building will also be greatly improved by the change.

State Forestry Commission to Establish Free Sanatorium.—The state forestry commission of Pennsylvania proposes to establish near Mont Alto park, in the vicinity of Shippensburg, a free sanatorium for persons suffering with consumption. At the forest's edge 30 cabins, each furnished with two bunks and a table, will be built. In the field an assembly room will be erected. The tract includes 40 acres of white pine forest and pure mountain springs are within easy reach.

Alliance of Hospitals.—Twenty-five hospitals of this city are now allied for mutual good in the "Hospital Association of Philadelphia." The Association is advisory only, the principal topic thus far discussed being that of the cost of maintenance. One speaker said that the diverse ways in which hospitals estimate the cost of maintenance cause confusion in the minds of the members of the State Board of Charities, the trouble being that one hospital considers certain things under the head of maintenance, while another does not. Another speaker said that there would always be confusion until maintenance of plant and maintenance of patient were separated. He also said that hospitals could be maintained for one-third less than the present rate if they did not have pay patients. Committees were appointed to recommend a uniform method of maintenance, to report on the subject of nurses, and on abuses in dispensary practice.

Peribronchitis and Interstitial Pneumonia.—As the guest of the Philadelphia Pediatric Society at the

meeting of Dec. 9, Dr. Abraham Jacobi, of New York, delivered an interesting address on the above topic. He reviewed quite fully the literature of the subject, giving in some detail the views of various writers on the occurrence and causes of interstitial pneumonia in children. The differential diagnosis of this condition from various other pulmonary lesions was then discussed, the statement being made that many cases of suspected tuberculosis of the apex are interstitial pneumonia. As to treatment, prevention is of great importance, the principal points being protection against infection and cold. To this end, strengthen the mucous and cutaneous surfaces. Get the child used to cold water. After a baby of one year has had a warm bath it should be sponged with water at a temperature of 75, 70, or 65 degrees. When the child is older, water at a still lower temperature should be used. Pneumonia patients should be removed from hospitals as soon as possible, as croupous pneumonia is transmitted from bed to bed. In the way of fortifying anemic children cow's milk should not be given too long, and drugs, such as arsenious acid, phosphorus, and iron given. If improvement does not occur under this treatment, suspect syphilis and give mercury. Digitalis may be given to children for long periods of time with no bad results. Children a year old will take this drug, often with most happy effect. To promote absorption of proliferating and newly formed fibrous tissue, begin early the administration of iodine.

Dr. Lorenz in Philadelphia.—The long-talked of visit to Philadelphia of Dr. Adolph Lorenz, the noted Austrian orthopedist, occurred during the week beginning Dec. 8. His five days' stay here was characterized by him as being "strenuous." Besides selecting cases for his clinic at the Jefferson hospital, the only place at which he operated in the city, he examined many cases in consultation, this occupying three days of his time. On Wednesday evening, the Philadelphia Medical Club tendered Dr. Lorenz a reception at the hotel Bellevue, and on Thursday evening he was given a reception at the Jefferson Medical College. Throughout his entire stay in the city, whether sight-seeing, attending receptions, or operating before hundreds of physicians and students, the modesty of Dr. Lorenz stamped him as a great man and endeared him to all with whom he came in contact.

The Clinics of Dr. Lorenz.—The only public clinic of Dr. Lorenz was held at the Jefferson Medical College hospital at 1 P.M., Thursday, Dec. 11. To this clinic were admitted only the senior class of the college and some 500 invited guests. Perhaps the majority of the physicians and surgeons present had come to the clinic in a more or less skeptical frame of mind. Though somewhat familiar, through descriptions, with the methods of Lorenz, the newspaper accounts of his western tour had awakened some doubts as to his real status as an operator. The clinic dissipated every doubt. There is no notoriety-seeking by that man. The newspapers are entirely responsible for that element. Every one went away convinced, whether he believes in the method of treatment or not, that Lorenz is the greatest exponent of that method. His work is the work of an artist in his line. Four cases were operated upon, one being a case of bilateral dislocation. The time occupied by the cases in order was 25, 20, 15, and 45 minutes. The last was the most difficult one met with by the noted surgeon in several years. The work of Dr. Lorenz's assistant, Dr. Mueller, in assisting with the manipulations and in applying the plaster dressings was also of the highest order and evoked much favorable comment. The fourth case so exhausted Dr. Lorenz that a fifth was held over until the next day when it

was operated upon before about 30 invited surgeons. This was a bilateral dislocation and was reduced without much trouble, but one side giving any special difficulty. One remarkable thing about these cases is the slight amount of pain experienced by the children after operation. Of the four cases, but two required an anodyne the following night, and those only a trifling quantity of paregoric.

Typhoid at Bellefonte.—An epidemic of typhoid fever is alarming the residents of Bellefonte. In the town and immediate vicinity there are at present 40 cases, all of which have developed within the past two or three weeks. There have been two deaths and a number of patients are critically ill. An investigation by the Board of Health revealed the fact that the epidemic had been caused by polluted milk, a majority of the cases being among the users of milk from a certain dairy. Bacteriological examination showed that this milk contained large numbers of typhoid bacilli.

Society of Vienna Students.—The third annual meeting of the Wiener Verein, of Philadelphia, was held on Dec. 6. This society is formed of physicians and surgeons who have at some time studied in Vienna. Dr. Charles S. Turnbull was elected president, and Dr. C. Y. White, secretary and treasurer for the coming year.

CHICAGO.

Children's Hospital Planned.—Announcement has been made that the reform department of the Chicago Woman's Club is taking preliminary steps toward the holding of a conference to consider the establishment of a hospital for children in Chicago. The conference is to be held the latter part of this month, and will take up the need of an institution for sick and crippled children, and especially those afflicted with contagious diseases. A full discussion of proposed plans is being arranged for.

American Roentgen Ray Society.—The American Roentgen Ray Society held its annual meeting in Chicago, Dec. 10 and 11. The following officers were elected for the ensuing year: President, Arthur W. Goodspeed, Ph.D., of Philadelphia; vice-presidents, Dr. John B. Murphy, of Chicago, and Dr. Wm. Jordan Taylor, of Cincinnati; secretary, Dr. James B. Bullitt, of Louisville, Ky.; treasurer, Dr. Weston A. Price, of Cleveland; executive committee, Dr. James P. Marsh, of Troy, N. Y.; Dr. Walter W. Johnson, of Rochester, N. Y., and Dr. Ralph R. Campbell, of Chicago.

Need of Isolation Cottage at Parental School.—No arguments based upon considerations of economy should dissuade the board of education from complying with the recommendations of the committee of physicians regarding the building of an isolation refuge for pupils afflicted with contagious diseases in connection with the parental school. Drs. Chvatal, Hartung and Dudley of the board of education were appointed a committee to investigate the dormitory and hospital questions at the parental school. They reported in favor of using the attic of the building for a dormitory rather than a hospital, and the construction of a separate cottage as a temporary isolation hospital for the care and detention of children afflicted with contagion until their parents could take charge of them. An appropriation for this purpose was made by the building and grounds committee of the board, but some of the trustees favor the use of some of the rooms in the parental school for hospitals. The separate cottage plan should be carried out in the interest of public health. The parental school cannot be regarded as complete without this adjunct. The use of rooms in the main building for isolation hospitals would incur the danger of exposure of healthy

pupils to contagion. The public schools under ordinary conditions are the great distributors of contagion. This danger is now minimized as much as possible under the present inadequate system of medical inspection. There is much greater danger from the parental school because of the fact that its truant occupants are largely gathered from the streets and slums, where exposure to contagion is greatest. These children cannot be thrown into the street, when symptoms of contagion are manifest. At the same time, they must be promptly separated from the other pupils. A temporary isolation cottage is a necessity.

Politics in Our State Hospitals.—If anything were needed to impress the people of Illinois with the fact that the state charitable institutions have been scandalously prostituted to the base ends of party bosses and politicians, and have become mere party machines, it is supplied by the editorial comment in scientific journals, devoted to discussion of the subjects that pertain to the state care of the insane and other classes of dependents and derelicts. The disgraceful conversion of the state hospitals for the insane into mere dumping grounds for party mendicants in this state is a matter of such general knowledge among alienists and experts in medico-psychological research in other states as to become the favorite example for illustrating the deterioration and degeneracy that result from political management of such institutions.

To Wage War on Consumption.—Consumption is about to meet an uncompromising foe in systematic opposition planned by the Visiting Nurse Association of this city. At a meeting of the directors, the following committee has been appointed to look after the preliminaries required to put the immature plans of the organization into practical operation: Mrs. James L. Houghteling, Mrs. E. C. Dudley, Mrs. S. J. Walker, Mrs. Arthur T. Aldis, and Mrs. Henry Hooper. This committee has held only one meeting, and it has been decided to call a conference, including prominent physicians, representatives of the board of health, to be held in the rooms of the Association in the middle of January. As far as formulated, the plans are to promulgate the doctrine that consumption is a communicable, preventable and curable disease. To this end an endeavor is contemplated to distribute literature spreading the knowledge of the disease as widely as possible. Question of founding a hospital for the proper treatment of the patients is also under consideration. Perhaps the greatest interest taken by the committee is the initiation of a measure to look after the prevention of tuberculous diseases, such as the improvement of tenement buildings, the creation of parks and playgrounds, public baths, gymnasium, creation of agricultural colonies for the predisposed, incipient and cured patients.

Presbyterian Hospital Extension.—The Presbyterian Hospital has bought two residences on Ashland avenue and Congress street, for which the sum of \$40,000 was paid. They will be remodeled immediately, and will be opened on the first of January, as a home for nurses connected with the hospital.

Sclerosis of the Mastoid Process.—At a recent meeting of the Chicago Medical Society, Dr. Otto J. Stein read a paper on this subject. After citing the report of a case of morphomania, in which the patient made extravagant claims of aural trouble, the author reports in detail the history of two of his own cases, presenting conditions of drug mania, but wherein operative measures revealed an advanced state of osteo-sclerosis of the mastoid process. After a careful study of his cases, the author arrives at the conclusion that, as the result of changes going on within the mastoid process, wherein the mastoid cells are gradually being

obliterated by the formation of new bone tissue, the symptom of pain may become so persistent and intense as to cause patients to take recourse to the effects of powerful drugs in order to obtain relief from their suffering. The character of the pain is described as very deep-seated; a dull ache, similar to a slight toothache, being constantly present. At intervals the pain increases to the extent of being neuralgic in character. It is centered mainly back of the ear, in the mastoid region, and thence radiating up towards the side of the head and down into the neck. Noteworthy is the absence of pain in front of the ear. Pressure over the mastoid, usually just back of the meatus, will elicit a sharp sensation of pain. As regards the relief of this condition, he holds that the operative measure of removing a core of bone from the eburnated mastoid process is justifiable and productive of prompt relief.

Splenectomy.—Dr. J. Clarence Webster reported a case of splenectomy. The patient's family history was quite negative. She was thirty-seven years of age, and gave a history of repeated attacks of malaria during her residence in the South for many years. Twice she was jaundiced, and on two occasions had a severe pulmonary hemorrhage. Twenty-six years ago she had an attack of typhoid fever, and when a child was the subject of rheumatism. Her present illness dates back seventeen years, when she observed after the birth of her child a swelling in the right iliac region, which was quite painful, and of slow growth. Four years ago she was laparotomized, and the operator told her that he found an inoperable tumor connected with her right kidney. When seen by Dr. Webster during the summer, she complained of severe pain in the abdomen, chest, shoulder, and the right iliac region. Dysmenorrhea and frequent and painful micturition were prominent symptoms. She was very short of breath. For the past eight years she had very severe colicky pains in the right side, which at times were so intense as to demand the administration of chloroform. After the subsidence of these colicky pains, her urine was very dark and of a reddish-brown color, and of strong odor. Physical examination revealed an emaciated and sickly-looking woman, whose skin was intensely pigmented. The pigmentation was of a brownish color, diffused over the entire body, with here and there patches of intenser color. There were in and on the skin innumerable nodules. Examination of her blood showed 4,016,000 red cells; 16,800 whites, and 70 per cent. hemoglobin. Her temperature for the most part was slightly above normal, from 99° to 101° F.

Bimanual vaginal examination revealed a fixed and retroverted uterus, with appendages not distinctly palpable, but fixed and tender, and close to the right side of the uterus, extending to the ilium, and completely filling the right iliac fossa was a large movable tumor. After treating the patient for a few months on tonics, she was operated upon on Sept. 25, and a large tumor, which was enveloped in dense adhesions, which was fixed to the brim of the pelvis, adherent to the uterus and its appendages, to the bladder, and also the vermiform appendix, was removed. This tumor was found to be a greatly enlarged spleen. The patient made a very satisfactory recovery, and was exhibited by Dr. Webster to the members. Microscopic sections of the spleen and the cutaneous nodules were exhibited.

Case of Funnel Pelvis.—Dr. Chas. B. Reed reported this case. May 4, 1900, he was called in consultation to see a patient, aged nineteen, in her first confinement. In spite of the utmost efforts attempts to effect the delivery failed. The child was asphyxiated, craniotomy was done through the roof of the mouth, and the mutilated head passed the contracted outlet

with some difficulty. In Oct., 1901, she reappeared, pregnant for the second time, but with no knowledge of the date of conception. This time it was found necessary to resort to Cesarean section to extract the child. The child weighed 7½ pounds, and at the end of four weeks the mother left the hospital, with her babe in excellent condition.

The Relation of Gonorrhea to Tuberculosis of the Genito-Urinary Tract in the Male and Female.—Dr. Daniel N. Eisendrath read a paper on this subject, in which, after presenting a study of the cases found in the literature, and in his own practice, he drew the following conclusions: (1) That in patients suffering from an acute gonorrhea there may be an almost imperceptible transition into a malignant type of tuberculosis; (2) that subacute or chronic gonorrhea may mask the presence of a tuberculosis. That these, as well as the acute form, may act as predisposing and, at times, as exciting causes of tuberculosis. (3) In patients who show evidence of local complications of gonorrhea, such as prostatitis, vasculitis, cystitis or epididymitis, one should always bear in mind the possibility of tuberculosis and examine the urine for tubercle bacilli, if anti-gonorrheal treatment causes no improvement. (4) In patients with marked tubercular history, an attack of gonorrhea should be carefully watched, and the prognosis be guarded. (5) Gonorrhea, both in the male and female, often prepares the soil for a later invasion of the tubercle bacillus.

Report of Sixty Cases of Actinomycosis, with Demonstration of Specimens.—At a recent meeting of the Chicago Surgical Society, Professor R. Von Baracz, of Lemberg, Austria, read a paper on this theme, selecting the subject for two reasons: (1) because the disease is rarer in this country than abroad; (2) because he had made a special study of it, having had occasion during the last 14 years to observe it in 60 cases. The reason for its frequency in Galicia is owing to the extensive farming done in that country. As to the seat of the disease, he has had 52 cases of actinomycosis of the jaw and neck; three of the tongue; three of the thorax and lungs; and two of the abdomen. As to the abdominal form of the disease, he has had occasion to observe three more cases in the practice of colleagues, so that he has seen altogether five abdominal cases. Actinomycosis, he said, is produced solely by a special form of fungus, the *Streptothrix actinomycotica*. This fungus usually enters the body through the mucous membrane of the mouth, of the air passages, or of the digestive tract. Very rarely does it enter through the skin. The transmitters of the disease are exclusively minute vegetable bodies, as the awns of barley and grass particles. The proof of this is the frequent finding of these bodies in actinomycotic abscesses. The teeth are never the portal of entrance. The cases cited by Murphy, Partsch and others, in which a communication between abscesses of the soft parts and the alveolus was found, or in which a fungus was found in a decayed tooth, are not sufficient proof, in his opinion, that the disease gained entrance through the decayed tooth. Evidence of the incorrectness of this route of infection is the lack of decayed teeth in actinomycotic cattle, and sometimes in human subjects; the impossibility of finding the fungus in decayed teeth, and the frequent finding of the fungus in the soft parts of the cheeks. He has himself detected such vegetable bodies in 13 cases of cheek and tongue actinomycosis, but never in decayed teeth. In these he only found the *Leptothrix buccalis*. He showed a specimen of actinomycosis of the tongue, in which the center of the ray fungus colony was the awn of oats. Decayed teeth play an important rôle in the etiology of the disease, as the softened and

swollen gums allow of easy entrance of the fungus with a foreign body. The fungus rarely develops in the mucous membrane of the mouth itself.

Regarding the treatment, in the first 40 cases the treatment was operative, consisting of curettement and extraction of teeth. As the disease generally produces a hard wall around the softened area, which hinders the extension of the process, he attempted in several cases to produce such a wall, which consists of connective tissue, by hypodermic injection of irritants, like tincture of iodine, and 20 per cent. solution of nitrate of silver. In this manner he was able to cure his last nine cases without any operative interference. Nitrate of silver in sticks, or in 20 per cent. solution, not only produces such a boundary of connective tissue, but kills the fungus. Tongue actinomycosis occurs in the form of circumscribed or diffuse abscesses. In three cases of actinomycosis of the tongue, he found vegetable bodies in softened tissues. These were cured by opening and curettement. In actinomycosis of the thorax and lungs, the prognosis is unfavorable. Three of his cases died. The fungus enters here by the air passages or the esophagus. In one case, at the autopsy, he found a fistula between the esophagus and the posterior mediastinum. These cases are not suitable for surgical treatment. He said the reported cures of lung actinomycosis must be considered *cum grano salis*, because of the short time for observation after the operation. He believes that intravenous injections of collargol in actinomycosis of the lung and thorax will be of great service. He has attempted intravenous injections of the various soluble preparations of silver in a number of dogs and rabbits. For this purpose he used one to two per cent. solutions of argonin, argentamin, largin, ichthargon and soluble colloid silver (collargol), in increasing doses, and the last proved the best, in comparatively large doses, according to the body weight of the animals. He observed no unpleasant symptoms. As far as the fungus itself is concerned, he comes to the conclusion through personal observation that there is only one form of the fungus which produces actinomycosis. Some authors require cultures for a positive diagnosis of the disease, but he believes this to be unnecessary. The fungus can be easily discovered microscopically, and it is often possible to diagnose the disease macroscopically with some degree of certainty.

CANADA.

The Matriculation of the Ontario Medical Council.

—The Minister of Education for Ontario has received from Dr. R. A. Pyne, the Registrar of the Ontario Medical Council, the report of the Executive Committee of that body which interprets the regulation with regard to matriculation in medicine which has been causing medical students so much concern during the past three months. It provides that the standard for admission to study medicine for 1903 shall be the same as for 1902, and for 1904 and subsequently, the standard of admission shall be either (1) junior matriculation in arts, including physics and chemistry, with honor standing in any one subject of the course, or (2) senior matriculation, in arts as now provided for in the regulations. As the changes now announced will not come into operation until 1904, there will be ample time for their discussion and amendment if necessary.

Toronto Dispensary.—When the General Hospital was established in Toronto in 1854 in the east part of the city, the Toronto Dispensary was established in the west end in the same year. There has been very little change in the management of this dispensary in that time and it has continued to do good work in a quiet and unobtrusive way. According to the annual report

for the year 1877 there received benefit from this institution in that year 4,000 new patients and 6,000 old ones. This made a total of 10,000 applications for relief. During the last official year (1901) the number of applications reached nearly to 17,000, representing all types of disease. As there is urgent need for funds in order that this old-established institution may continue on at its work, the Board of Management is making an appeal to the public for financial assistance to build and equip a modern and up-to-date dispensary.

Fatal Epidemic of Measles on Arctic Shores.—The Public Health Department at Ottawa has received from the United States Public Health Department the report of Dr. Vogel, of that department, dated Dutch Harbor, Alaska, Oct. 20, stating that measles in epidemic form prevails among the natives inhabiting the Arctic shores of North America in the vicinity of the mouth of the McKenzie River. The captain of the whaling steamer Alexander, also reports that there have been over 100 deaths from the disease in several months. Dr. Vogel states in his report that measles in that section of the world should be a quarantinable disease, as it is as fatal to the natives as smallpox is to unvaccinated Caucasian communities.

Regulations Regarding Diseased Immigrants.—A short time ago the Immigration Department at Ottawa appointed Dr. Ellis of St. John, N. B., chief immigration medical officer, and now has prepared regulations for his guidance. He will be empowered to deport immigrants suffering from infectious or dangerous diseases. Those immigrants whose destination is the United States, and who have been refused certificates by the American Commissioners at the seaports, on the ground that they are physically or mentally defective, will be deported by order of the medical officer. The regulations also provide for the medical treatment of those at their own expense who are unable to proceed to their destination. In addition the department will appoint medical officers under Dr. Ellis, at the ports of Quebec, St. John and Halifax, who will be invested with full authority to carry out these regulations.

Appointments at McGill University, Montreal.

At a meeting of the corporation of McGill University held last week the resignation of Dr. P. G. Woolley was announced of the governor's fellowship in pathology. Dr. H. Wolverstan Thomas was appointed to a faculty fellowship in pathology, vice Dr. Charlton. Dr. A. H. Gordon, gold medalist, 1900, was appointed demonstrator in physiology, vice Dr. Scane, who has removed from Montreal. Dr. Starkey, the newly appointed professor of hygiene, was selected to deliver the annual university lecture on a date in January to be fixed later. There are 420 medical students registered at McGill.

Contagious Diseases Hospital for Montreal.—The latest phase of the proposed new contagious diseases hospital for Montreal is the proposition that the Notre Dame Hospital and one of the English Hospitals erect pavilions for the treatment of patients and the city grant each for the purpose the sum of \$10,000. Under this plan an average of 20 patients a day would be taken care of for the above sum, the contract to extend over a period of 20 years. Whenever the patients exceed 20 in number, the city was to pay in addition 75 cents a day for children and \$1 for adults. The hospitals are favorable to this plan, Notre Dame to look after the French while one of the English hospitals looks after the English. The above has the approval of the mayor of the city.

The Gifts of Two Canadians to London, England, Hospitals.—In July just before the coronation of King Edward, the news came across the water that Lord Strathcona and Lord Mount-Stephen had made

munificent donations to King Edward's Hospital Fund for London. At that time it was merely a matter of conjecture as to the amounts given; but now that the secretaries of the Fund have announced the receipt of the first quarter's interest on the gift, some idea may be gained of the princely donations. The first quarter's interest on the securities set aside by the two noble Lords amounts to £4,094, 2s 4d. This will give an annual income (at the prevailing rate of interest) of £16,376 13s 4d., an amount equal to \$79,699.83, for all time to come.

GENERAL.

International Congress for the Prevention and Cure of Occupation Diseases.—Plans are being formed for this congress, of which Dr. M. De Cristoforo, Deputy to the Italian Parliament, is the leading spirit. It is proposed that it shall convene at Milan in 1904, and its objects will be the study, prevention and treatment of occupation diseases and the laws pertaining thereto. In connection with it, there will be an exposition of industrial and professional hygiene.

News from Radica.—The Hindu girl who survives the surgical separation from her sister Doodica, is now at Hyères, and while, like all tuberculous subjects, her condition varies with the atmospheric changes, it is now believed that the favorable climate, and care she is receiving will bring about a complete cure. When questioned concerning her sister, it is said that she gives the impression that the separation came in the nature of a relief to her, as Doodica, being the larger and stronger of the two, subjected her to no little annoyance. Radica has now reached the age of thirteen.

University of California.—There is much gratification over the fact that Dr. Jacques Loeb of the University of Chicago has accepted the new chair of physiology in the University of California. The facilities for research which he will have will be admirable. The building of Physiology Hall, a temporary building to contain his special workshop, will be begun at once; and the \$425,000 lately given by Rudolph Spreckels will provide a complete outfit of salt-water aquariums, research laboratories and class-rooms. Dr. Loeb and Mr. Howard, the supervising architect of the university, have already held conferences at Chicago, and the plans for the building have been drawn up. Dr. Loeb is to have as assistants three young biologists, Dr. Frank Bancroft of this university and Dr. Martin Fischer and Charles Rodgers from Chicago University. Several scientists will follow him to his new laboratories for purposes of research, so that the department will begin work in January with much promise.

Changes in the Medical Corps of the Navy, Week Ending Dec. 13.—Medical Director F. M. Gunnell, retired, ordered to the Bureau of Medicine & Surgery, Navy Department. P.A. Surgeon E. O. Huntington, detached from treatment at the Naval Hospital, New York, and ordered to duty at the Navy Yard, New York. P.A. Surgeon W. H. Bucher, ordered to duty at the Naval Hospital, Norfolk, Va.

A New Psychological Laboratory at Oberlin.—About five years ago a psychological laboratory was begun for Oberlin, but the equipment was so entirely inadequate as to make it impossible to do anything more than elementary work. Oberlin is to begin the foundation of a laboratory which shall adequately meet in this regard the needs of a high-grade college.

Obituary.—Dr. Lucy Edwards, 50 years old, one of the most prominent women physicians in Northern New Jersey, was found dead in bed yesterday at her home, 194 North Sixth street, Newark, after having retired in apparently good health. She had locked her

room door and a servant who tried to awaken her in the morning had to summon neighbors, who got into her room through a window and found her dead. Death was attributed to heart disease. Dr. Edwards practised medicine in Newark for nearly twenty years and was well-to-do and popular.

CORRESPONDENCE.

OUR LONDON LETTER.

(From Our Special Correspondent.)

LONDON, December 6.

THE GENERAL MEDICAL COUNCIL AND THE BRITISH MEDICAL ASSOCIATION—RETIREMENT OF A MEDICAL M.P.—A MEDICAL COLONIAL GOVERNOR ON MALARIA—THE ARMY MEDICAL SCHOOL—THE AMENDMENT OF THE LUNACY LAW.

OUR professional Parliament, the General Medical Council, concluded one of its half-yearly sittings this week. The most important part of the business before it was the eternal question of the preliminary education of medical students; but nothing came of the discussions. A memorandum on the subject was presented to the Council by the British Medical Association some time ago. This was referred to a Committee which submitted a reply. It is not clear, however, whether this is to be taken as the reply of the Council. The President stated distinctly that it was the reply of the Committee. This leaves the matter in a somewhat mysterious state, for the Council can, if it sees fit, repudiate the reply of the Committee. I mention this not as having any interest in itself, but as an illustration of the unbusinesslike methods of the General Medical Council. The Council does not love the British Medical Association, which it loses no opportunity of trying to snub, undeterred by the fact that the snub usually comes back on its own head. Mention has been made in several previous letters of the new law for the registration of midwives, and it has been said that the medical profession, thanks mainly to the trade-union spirit in which its agitation was conducted, was finally thrust aside by the government. One concession was, however, at the last moment made to the doctors, namely, that practice for gain by uncertified midwives was penalized. For this solitary point scored to them the doctors have to thank the British Medical Association. Yet in the face of this open, palpable fact, an attempt was made to claim for the General Medical Council the credit of getting the clause referred to inserted in the bill. The attempt failed ignominiously, but the fact that it should have been made is a curious example of the petty jealousy with which the Council regards other professional bodies. The rest of the business done can be summed up in the words of the song in "Iolanthe" about the House of Lords. The Council

Did nothing in particular

And did it very well.

One of our medical Members of Parliament will shortly cease to adorn the House of Commons. Sir Michael Foster, who is Professor of Physiology in the University of Cambridge, but who represents the University of London, has announced his intention of resigning his seat. His reason for taking this step has not been made public. I should think it probable that the work bores him, for although a man of the world in some respects, he is most at home in the groves of Academe. His retirement is a great loss to the medical profession, which had in him a representative of whom it might well be proud. Among those who are likely to come forward as candidates

for the vacant seat is Sir John Williams, the leading authority on obstetrics in this country. He is Emeritus Professor of that subject in University College, London. It has been suggested that, if he is returned, he would make an especially suitable head for the Labor Department of the Board of Trade. There is a well-known story about Joseph Addison who, though a charming writer, was no speaker. It was, however, his fate to sit in Parliament and to hold office as a Secretary of State. On one occasion it is recorded that he rose to make a speech. He began, "Mr. Speaker, I conceive. . . ." These words he repeated twice, and being unable to get any further, sat down in confusion. Some one thereupon called the attention of the Speaker to the fact that Mr. Addison had conceived three times and brought forth nothing. If Sir John Williams is elected, he may at least be able to help honorable members to a happy delivery of their conceptions.

Sir William MacGregor, Governor of Lagos, was a doctor "by first intention" and practised his profession in tropical climes till he found administrative work more attractive. He has earned a great reputation as a Colonial Governor and he has put his medical knowledge to excellent use in safeguarding the health of the communities over which he has ruled. Last week he delivered an address on the malaria problem at the University of Glasgow. He said that the heavy responsibility of Great Britain which possessed the lion's share of the malarial regions of the earth might be illustrated by the statistics of malaria in India alone, where in 1900 the deaths caused by that disease numbered 4,919,591. The significance of these figures may be grasped more easily if one reflects that this annual mortality exceeds the total population of Scotland by half a million persons. He asked his hearers to imagine what would be the terror and consternation produced in Europe were this appalling mortality centralized and located so that the whole population of Scotland became extinguished by malaria in 1903, and the whole of the subjects of the kingdom of Holland succumbed to the same malady in 1904, followed by those of Sweden in 1905. Discussing the means of prevention, he held it as perfectly certain that quinine exerted a powerful preventive action against malaria. It did not seem to make very much difference how the quinine was taken so long as an adult individual absorbed at least 15 grains a week. It would doubtless, he thought, become a rule before long that officers who did not take quinine and suffered from malarial fever would not receive pay when off duty on account of the disease. His own treatment of malarial fever in British Guiana was very successful in many hundreds of cases. It consisted of a dose of 10 grains of quinine with five grains of antifebrin once or twice a day. In the way of mechanical means of prevention, he advocated the use of mosquito nets and wire netting, together with draining and drying up pools and swamps, or where this could not be done, destroying them as breeding places for the mosquito by covering them periodically with crude petroleum. In urging the regular use of quinine as a prophylactic, one was met with the objection that blackwater fever was produced by quinine, or that if constantly taken it would begin to lose its effect. It was a superstition which died hard. Blackwater fever, said Sir William, might occur without the inciting cause of quinine: he had had experience in his own person, for he had had his one attack when he had not taken quinine for many months. He inclined to the opinion that blackwater fever was malarial, and he thought it likely that he should lean to that view until he knew of some place where blackwater occurred without malaria. For it there was no fixed treatment.

The most successful known to him was that introduced by Dr. Gouzien, late chief medical officer of Dahomey. It consisted essentially in the subcutaneous injection of a standard saline solution. Finally, he said that in the great struggle with malaria he attached much importance to education, not only of the people who lived in malarious countries, but also of those who remained at home in the mother country. I have given Sir William MacGregor's views at some length, because they seem to me important as being the outcome of the experience of a shrewd observer. He is a son of Caledonia, stern and wild, with a harsh voice and a Scotch accent which rasps the ears like a nutmeg grater. He is one of the class of young Scotsmen who work as farm laborers in the summer to earn enough to pay their college fees in the winter, and cultivate the *Muse tenui avena* which Sydney Smith translated "on a little oatmeal." A year or two ago he delivered the introductory address at the London School of Tropical Medicine before a distinguished audience. The oration was horribly stuffed not only with epithets of medicine and the allied sciences, but with quotations from Greek, Latin, French, German and Italian—all pronounced after the manner of his native wood notes wild. One of the afflicted persons who listened to this polyglot discourse said it contained specimens of every European language, with the exception of English. But for a' that, he is a man of cultivated mind and a wise physician, and he is further interesting as an example of the medically trained administrator, a type which at present has its most striking embodiment in the person of General Leonard Wood.

The Army Medical School where all young surgeons entering on a military career have for many years past undergone a course of special post-graduate instruction has been moved from Netley near Southampton to London. The great military hospital at Netley still remains where it was. The present position of affairs therefore is that the School has no hospital attached to it. A hotel near the headquarters of the Army Medical Service has been hired for the young men, and they attend lectures and go through courses of laboratory instruction at the Examination Hall of the Royal Colleges of Physicians and Surgeons which is situated on the Thames embankment not far from the river side of the Hotel Cecil. At first sight this translocation of the Army Medical School to London, before there is a building ready to receive it, might seem to be only another instance of the amazing talent for blundering which is the chief characteristic of our War Office. I have reason to believe, however, that in this case there is some method in its apparent madness. The removal, premature as it may seem to be, is designed to force the hand of the Treasury which paralyzes attempts at efficiency by the tight grip it keeps on the public purse. It is thought that the school is more likely to be thoroughly up-to-date in its teaching under the eye of the Advisory Board, which now rules the Service, than at a distance from the seat of authority. Moreover, under the new regulations officers have to devote a good deal more time to study and practical work in order to qualify for promotion. Hitherto they have been allowed to spend their "study leave" pretty much where and as they pleased, with the natural result that in a large proportion of cases the study was merely nominal. Now the two periods of six months required to qualify for promotion must, except in the case of officers serving in India, be gone through in London, and it is mainly for this purpose that a new Medical Staff College is to be erected at Millbank on the north bank of the Thames, a little higher up than the Houses of Parliament. The change is not approved of by some

of the professors of the school, and one of them, Dr. A. E. Wright, the Professor of Pathology, has resigned ostensibly on that ground. He is an able man, but his loss to the school will not be irreparable. He has something of the erratic ways of genius and his teaching was over the heads of his students, the vulgar details of what may be called everyday pathology being treated in rather summary fashion, while much time was bestowed on the spinning of intellectual cobwebs. Dr. Wright, whose name is doubtless known to your readers in connection with inoculation against enteric fever, had, it is said, become so utterly obsessed by the subject that, like the head of Charles the First in Mr. Dick's appeal, it intruded itself into all his teaching. The value of the method is, to say the least, still unproved, and I understand that the authorities, medical and military, are of opinion that it has been unduly pushed. Professor Wright is absolutely above any suspicion of sordid motives, but he is an enthusiast. He was not long ago appointed pathologist to St. Mary's Hospital, a post which perhaps he thought he might hold in conjunction with his professorship in the Army Medical School. The War Office, however, has just invited him to make his choice between the two, and he has decided to shake the dust of the school off his feet. His decision may be regarded as a sacrifice to principle, for it means the loss of \$3,000 a year in salary. It should be added that although the professors naturally feel the position of being forever in their official taskmaster's eye rather irksome, the general opinion is that the removal of the school to London is likely to be beneficial to the service.

The proposals made by Sir William Gowers for the amendment of the Lunacy Law, the gist of which was given in my last letter, seem likely to meet with strenuous resistance from the medical officers of lunatic asylums. A Joint Committee of the British Medical Association and the Medico-Psychological Association has been formed to consider the whole question. This Committee held its first meeting on December 3, and it is understood that the general feeling of the members was distinctly adverse to Gowers' suggested reforms. This is doubtless partly due to jealousy at the intrusion of an outsider, however eminent, into a *hortus inclusus* within whose circle they think none should walk but they. It is also partly due to enlightened self-interest, for men who live by keeping asylums, naturally look askance at a proposal which would deprive them of some of their best-paying patients. There is probably, too, an element of resentment at the manner in which Gowers has brought the matter forward, for his demand for reform, though nominally addressed to the Medico-Psychological Association, was really made to the public. The committee of the two associations has not yet taken the press into its confidence, but it is understood that the following course of action was decided upon: That a deputation should be appointed to wait on the Lord Chancellor to ascertain whether the government intends to introduce any lunacy legislation. Should the Lord Chancellor's reply be in the affirmative, he will be further approached to discover if this legislation will be in the shape of the proposed Lunacy Act of 1900, which successfully passed through the House of Lords, but which the government did not find time to introduce into the House of Commons. Should the reply again be in the affirmative, the Parliamentary Committee of the two bodies will then consider the advisability of making additional recommendations to the Lord Chancellor. This, however, is unlikely, for though the unsuccessful bill of 1900 is not regarded as an ideal one, it yet achieves the main object of the agitation which Sir William Gowers is

striving to set on foot, that is to secure more reasonable and humane treatment for persons on the borderline of insanity.

TRANSACTIONS OF FOREIGN SOCIETIES.

French.

TREATMENT OF APPENDICITIS—NEPHROTOMY FOR RENAL CALCULUS—HEREDITARY SYPHILITIC TABES DORSALIS—TREATMENT OF TETANUS BY THE METHOD OF BACCELLI.

DURING the past month and a half the French Societies have held their usual regular meetings. Notes of the more important ones follow:

MORY, at the Society of Surgery, Oct. 29, 1902, a member of the military staff, read notes on the treatment of appendicitis, particularly in those cases in which the surgeon ordinarily hesitates to interfere, as in the case of abdominal contusion. He attaches the greatest possible importance to the condition of the pulse. If he establishes the fact of the least acceleration of the pulse, at the end of a few hours, he immediately proposes intervention. If, on the contrary, the pulse at that time is stationary, he waits until the next day. If, at this moment, the frequency of the pulse is increased, he immediately carries out the operation. Compliance with these two simple rules has always worked good results in his hands. He never uses ice in cases of this kind, because he finds it tends to mask the symptoms. He always, however, puts the patient into bed and prescribes limited diet.

SECOND referred to the observation of appendicitis perforated during the period of quiet, which Ligneu had recently communicated to the society, and the value of which as a fact in medicine, Regnier had disputed, and had apparently blamed the operation itself in certain cases of this disease with a fatal issue. He also stated that there was a fact in his own judgment, on the contrary, which was important in these cases, namely, that as a rule the fatal outcome is the consequence of a delayed diagnosis, which really led to an operation too late in the disease. His own case of this nature concerned a young woman who had been cared for during several months preceding his first visit, on the diagnosis of hepatic colic. She was suddenly seized with violent pain in the right iliac fossa. It was, however, after 50 hours of this pain that a diagnosis of appendicitis, with perforation and generalized peritonitis was made. For this, naturally, a gloomy outlook was given. In agreement with the opinion of Dieulafoy, he operated on this patient on the ground that, although probably dying, her only chance consisted in a prompt operation. He found a gangrenous appendicitis, without adhesions, and with several cupfuls of toxic, foul liquid in the peritoneal cavity. Death followed in three days. He is convinced that if this woman had been operated on earlier, she would have recovered, just as he has seen other patients operated on before the forty-eighth hour recover completely from gangrene of the appendix, equally extensive. He believes that the moment has arrived for publishing broadcast all cases of death from appendicitis, due directly or indirectly to delay, because it is by a systematic denunciation of this method of treatment that the real danger of this disease will be eliminated.

VILLAR, of Bordeaux, said that he was becoming more and more an interventionist, because of the impossibility of physicians presaging what will be the outcome of an appendicitis which has just been diagnosed. It is a well-known fact that in many cases where at the beginning the symptoms are sufficiently benign, the lesion suddenly became most treacherously grave and susceptible of fatal termination. These cases may be saved

only by a very prompt intervention. All patients upon whom he has so far operated at the beginning of the symptoms are doing well, in such a uniform manner that he cannot possibly see what blame the temporizers may lay against an early operation. All the disasters in his hand, which he is able to recall, on the contrary, have been due to delay.

BAZY, in discussing the subject of nephrotomy for renal calculus, with immediate suturing of the kidney, and without drainage, said that Riche had presented an observation on this subject of which he wished to take note. The patient was a forty-one-year-old woman on whom a diagnosis of right-sided pyelonephritis had been made. When nephrotomy was performed, a large calculus was removed. The tissue of the kidney seemed to be in good condition, therefore the operator sutured it together without drainage. The patient recovered promptly and perfectly. There was apparently a large amount of risk incident to suturing an infected kidney, but Riche did not decide to carry out this maneuver before he had found out that there was no retention, and that therefore he could depend upon the ureter to maintain perfect drainage. The advantage to the patient was that she thus avoided the discomforts of a lumbar fistula. Before the operation Riche separated the urine. Basile thought that this method was not necessary, excepting in a very small number of cases, because in the majority of cases it is possible to make the diagnosis distinctly by other means. Moreover, in the male subject, the use of this apparatus is not without considerable difficulty to the patient and surgeon alike.

BABINSKI, at the Medical Society of the Hospitals, Oct. 24, 1902, in discussing the question of hereditary syphilitic *tabes dorsalis*, said that there are in literature 20 well-authenticated reports of this condition. He thinks that the disease exists more commonly than is generally supposed probably because it is usually present in a more or less masked form. For this reason he begged to present the histories of two such cases. The father of each of them was himself a tabetic. The first case was a young woman, twenty-two years of age, presenting the teeth of Hutchinson, who, up to her eighteenth year had enjoyed good health, excepting that at her birth she presented ulcers around the anus, and that during her seventh year she was seized with convulsive tic. In her seventh year she presented interstitial keratitis, with all the characteristics of hereditary syphilis.

During the past two years she has been a victim of crises of pain, and her pupils are not active to light. Further, it is to be noted that the father of this poor patient contracted syphilis while her mother was pregnant with her, and thus herself, became contaminated. The father at present presents the characteristic signs of *tabes dorsalis*, namely, abolition of the reflexes at the knee and ankle, irritability of the bladder and lightening pains and the Argyll-Robertson pupil. The other patient was a fifteen-year-old girl whose pupils were insusceptible to light, whose reflexes at the knee and ankle were abolished, whose bladder was showing symptoms, who had a choroiditis on the left side of syphilitic character, and, finally, whose cephalorachidian fluid disclosed lymphocytosis. The woman also presented mental disorders pointing toward an early dementia, perhaps due to a meningo-encephalitis of uncertain distribution. Her father was the victim of *tabes dorsalis*, precisely like the father of the foregoing case. The recognition of facts like these are of really practical value, because it is already admitted that treatment with mercury, energetic and persevering, may exercise upon these hereditary syphilitics a curative effect no less

active than in acquired *tabes*, that is to say, that it may delay in a fixed measure the progress of the disease.

CLAUCK contributed an observation of a forty-six-year-old man, who, five days after having received a little cut on the little finger of the left hand, presented symptoms of an intense and tonic paroxysmal contracture of the muscles, with fever, delirium, and other characteristic signs of tetanus. He immediately received an injection of 20 c.c. (5 drams) of antitetanic serum, and then, on the following days a daily dose of 0.2 grams (1.5 minims) of carbolic acid. In addition to these means of treatment, artificial serum was injected and chloral given in large doses, and the wounded finger removed. During 48 hours the condition of this patient remained practically featureless; then the fever and other symptoms began to abate and enormous quantities of sweat and urine were passed. A few days thereafter, complete recovery was recorded. It is true that one may not definitely attribute the success of this case to carbolic acid, because so many other means of treatment were employed at the same time. However, since, in so many other cases the same means have failed to produce a good result, through apparently the ineffectiveness of their action, it is possible to suppose that if the carbolic acid had not been used, the patient would have died.

GILBERT and LIPMANN, at the Society of Biology, Oct. 25, 1902, read a paper on the subject of the bacteriology of cholecystitis. They said in part that the study of 12 cases of cholecystitis, with examination of the fluid withdrawn from the gall-bladder, had led them to believe that the fluid is always fertile, whether the cholecystitis is suppurative or not. In some cases the germs are anaerobic, while in others they are aerobic. The latter are by far the more numerous in the suppurative cases. The microbes, which were the more frequently found of the anaerobic type, are the *coli bacillus*, the *enterococcus*, *funiculiformis*, *streptococcus*, and the *anaerobius perfringens* and *radiformis*. In the vast majority of ordinary cases the first two germs mentioned in the foregoing list are commonly encountered. The majority of the anaerobic germs seem to have a natural habitat high up in the biliary passages of several animals—for instance, the dog, cat, beef, pig, etc., while, on the other hand, the aerobic germs are especially rare. It seems probable, therefore that in cholecystitis, infection of the first degree takes place from the germs already present, and this is followed or not by a more violent degree through the association of the same germs with aerobic bacteria from without.

BIZARD, at the Society of Dermatology and Syphilography, Nov. 6, 1902, presented a case of chronic devious syphilitic phagedenism. He presented the patient in the name of Gaston and himself. The woman had had a chancre of the genital organs in 1890. Ten months later a gumma developed in the right leg, and since that time the patient has almost always had phagedenic ulcers of the skin, which heal up at one point while they progress at others. Over most of her body are to be seen immense, spreading cicatrices, which occupy a large part of the back, the wall of the abdomen, and the left arm. In the left buttock there are now to be seen lesions which are active. One may remark a vast mass of ulcers with a red base, confluent from areas from which tissue has been lost, extremely suppurative, some round, others oval or serpiginous. The general condition of this woman is seemingly satisfactory. She does not present any other organic signs of the disease. Upon her face there is an outbreak, impetiginous in character, presenting suppuration and crust formation, which has continued for nearly three years. She states

that she has been under continual treatment for her syphilis, but she seems not to have taken enough iodide of potassium or enough mercury to have given her any relief.

SPECIAL ARTICLE.

REPORT OF THE CLINIC OF PROFESSOR ADOLF LORENZ, HELD AT THE HOSPITAL FOR THE RUPTURED AND CRIPPLED, DEC. 15, 1902.*†

BY LEONARD W. ELY, M.D.,

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AND

DEXTER D. ASHLEY, M.D.,
OF NEW YORK.

THE first public demonstration by Dr. Lorenz of his bloodless reduction of congenital hip dislocation was given Monday, Dec. 15, at 3 P.M., in the operating room of the New York Hospital for the Relief of the Ruptured and Crippled. Temporary seats were arranged in the operating room, and about two hundred physicians witnessed the operations, among whom were many of the most eminent surgeons of the city.

Dr. Lorenz, accompanied by his assistant, Dr. Mueller, entered the arena at 3:10 P.M.

Reading from manuscript in English, Dr. Lorenz first gave a short general outline of his functional weight-bearing method, prefixing his remarks by complimenting the hospital on its staff. At 3:15 the first patient was brought in anesthetized, and placed upon the table.

Case I.—M. S., girl, six years of age. History of a short lumb without instruments. The child presented the usual symptoms of left congenital dislocation, including a marked limp and lumbar lordosis, which latter symptom, however, was less marked than usual. Abduction in the affected limb was limited, and it was $1\frac{1}{2}$ inches shorter than its fellow. The head of the femur could be felt upon the dorsum illii, and was approximately of normal proportions, though slightly atrophied.

Professor Lorenz grasped the dislocated limb with his right hand, placing his left over the trochanter and calling attention to the shortening and slight atrophy, and then by alternate relaxation and traction, demonstrated the preternatural mobility in an up-and-down direction and in rotation, and the limited abduction.

Placing a rolled sheet under the pelvis, with his left hand Dr. Mueller made pressure over the anterior superior spine and the perineum, and with the right hand steadied the pelvis by holding the thigh in strong flexion, and abduction of 45 to 60 degrees.

Dr. Lorenz here called attention to the strong adductors and to their contraction, and explained that they offered the greatest resistance to reduction, and that his first object would be to overcome this adduction by tearing them subcutaneously. Standing on the left side of the patient, and grasping the knee with his right hand, with his left making pressure over the origin of the adductors and kneading the tissues at that point, he forcibly abducted the thigh. The adductors were stretched or torn in about $1\frac{1}{2}$ minutes.

The posterior muscles were now stretched by strongly flexing the thigh upon the abdomen, with the knee extended, and the anterior muscles were stretched by strong superextension. A little traction was here exerted to pull down the head opposite the acetabulum. He remarked that in older cases it was sometimes neces-

sary to exert considerable force in this maneuver, but that in this case, owing to the small amount of shortening and the mobility of the joint, this was not necessary.

With the thigh flexed at a right angle to the body, Dr. Lorenz strongly abducted the limb. "Observe," said he; "the rising of the head in what was just now a depression." With slight further abduction the head slipped with the characteristic snap into the acetabulum, the reduction having occupied just three minutes.

The Professor pointed out that while in a traumatic dislocation the work would now be ended, the instability of the reposition in cases of this kind must be overcome by stretching the anterior portion of the capsule by further strong superabduction and superextension. He also drew attention to the fact that both limbs were now of approximately of the same length, the reduced limb, owing to the shallowness of its acetabulum, being if anything slightly the longer; and to the flexion of the knee, caused by the rigid contraction of the hamstring muscles. This, he said, was a good sign, and showed that the posterior muscles had been put upon the stretch by the entrance of the head of the femur into its socket. Their contraction disappeared upon relaxation, and reappeared upon reposition. This contraction, however, must be overcome by repeated forcible extension of the leg upon the thigh. The stretching of these muscles forced the head deeper into the acetabulum. He deepened the acetabulum still more, and stretched the anterior portion of the capsule by forcible abduction. He then laid the child on her side, and by superextension and direct pressure inward and upward he bored into the acetabulum, and stretched the anterior portion of the capsule.

He finally demonstrated the relative stability of the different positions, relaxating the joint by bringing the thigh down into extension by the side of its fellow, and again by adducting it in flexion toward the middle line.

At 3:24, P.M., nine minutes from the beginning of the reduction, Dr. Mueller received the patient from the hands of his chief and proceeded to apply the plaster of Paris dressings.

Upon this plaster bandage, and the method of its application, Professor Lorenz is wont to lay great stress, and with reason. The Lorenz spica differs essentially from the spicas usually seen in this country. It has been described by each of us, in articles in the medical journals, but an exact description of the manner in which it was applied by Dr. Mueller will not be out of place here.

The child was laid with its sacrum upon the pelvic rest, its shoulders resting upon a small cushioned stool and slightly lower than the pelvis, the reduced limb, held by an assistant, being flexed at right angles to the body and abducted slightly behind the frontal plane. This is the so-called "primary position" of Lorenz. The sound limb meanwhile hung in slight superextension, and acted as a balance to hold the pelvis squarely upon the pelvic rest.

Dr. Mueller first applied a stockinet reaching from the lower ribs to below the left knee. This stockinet, when applied, had the appearance of a pair of drawers with the leg cut off on the sound side. Under this were placed two strips of bandage, one running down the reduced thigh, coming out below and above, the other on the sound side running vertically under the pelvic portion. These are called the "scratch bandages," and by means of them the child's skin under the dressings can be kept in good condition, and, as Professor Lorenz aptly puts it: "The child can be given a dry rub-down twice a day."

* Through the courtesy of Dr. Warren, House Physician of the Hospital for the Ruptured and Crippled, Dr. Ely was enabled to examine all of these cases before the operation.

† Both Drs. Ely and Ashley were students of Dr. Lorenz in Vienna and are well qualified to give this report.

Taking his stand between the child's legs, Dr. Mueller padded thickly the bony portions of the pelvis, the thigh and the knee with strips of absorbent cotton, in lieu of his usual interlining of sheet wadding, and enveloped this with a bandage, drawing it snugly over the crests of the ilia. Over this he applied his plaster of Paris spica.

This spica included the pelvis and the reduced thigh. It extended from a point just above the crests of the ilia to the knee-joint, being so molded over the pelvis as to fit snugly over the iliac crests and anterior superior spines. The bridge over the pubes was made especially thick—about one inch—layer after layer being added to strengthen the spica at this point.

Dr. Mueller then deftly trimmed the plaster, using a heavy, sharp scalpel instead of the customary pruning knife.

The upper border in front was made deeply concave, removing all pressure from the abdomen. The lower front border was trimmed to leave a bridge about $2\frac{1}{2}$ inches wide over the symphysis pubis, clearing the perineum, and on the outer side permitting flexion of the sound limb to 90 degrees. At the knee the line of the incision was from the tip of the inner condyle, sloping upward in both directions, exposing the patella, the popliteal space and the outer condyle, and allowing free motion of the knee. The child was turned over and the lines of incision were joined behind, the upper continuing nearly straight across, and the lower trimmed out so as to expose the natal fold and avoid subsequent soiling of the plaster by the child.

With his finger, Dr. Mueller turned out all the sharp edges of the plaster, and brought the stockinet up over the spica, making a neat covering.

The whole work of the reduction and of the application of the plaster showed consummate skill, and was greeted by a burst of applause.

While Dr. Mueller was busy with the plaster, Professor Lorenz continued the reading of his manuscript, the main points of which are summarized as follows:

His first object is to place the head opposite the acetabulum. This is easy of execution in young children, difficult or impossible in older children. All contractions of opposing muscles must be overcome before the reduction is attempted. As the age limit is approached, he is compelled to use preliminary traction upon the leg. He has abandoned the custom of tenotomy, which he formerly practised. The usual age limit for unilateral cases is nine to ten years. In one case he succeeded in a reduction at twenty-three years. The usual age limit for bilateral dislocations is six to seven years.

The characteristic features of his operation are to bring the bones to their normal posture, to keep them there, and to make them do their work.

He leaves on his first cast six months or longer. The duration of the whole treatment is one to two years. The time should be rather longer than shorter. He allows plenty of time for the shrinking and adjustment of the soft parts.

At the end of the first period of fixation the plaster is removed and the leg brought into the "secondary" or more comfortable walking position of moderate flexion and abduction. "Here," said the Professor, "is a time to be cautious. Be slow in bringing the leg to the anterior position. Rather let the child bring it down by its own efforts." In bilateral cases he would be pleased to see slight abduction persist.

While the child was still under the anesthetic, Professor Lorenz put its feet upon the floor and emphasized the importance of exercise during the whole plaster of Paris period. Active and passive motion of the knee must be sedulously cultivated.

After the second plaster spica has been removed, the pelvi-trochanteric muscles must be regularly and thoroughly massaged and special care devoted to the motions of extension and abduction in the hip-joint.

It is necessary to distinguish between anatomical and functional results. It is impossible to get a good anatomical result when the head of the femur is much atrophied, and in these cases he is satisfied with a good functional result. He does not do subsequent osteotomy.

Of a thousand cases, he has had good results in the majority. Observations have shown that while with the open operation the anatomical results may be excellent at the time, the functional results are sometimes very poor. There is a tendency to contraction later, and frequent relaxations also occur.

He paid a delicate compliment to a few surgeons in this country who have done the operation, and alluded to America as the home of orthopedic surgery.

In conclusion, with characteristic honesty and fearlessness, he described the only two serious accidents he has met with—one a tear of the femoral artery followed by recovery without operation, and the other, a case of gangrene by forcing the reduction and pressing the femoral artery between the head of the bone and the plaster.

Case II.—M. D., girl, aged seven years, left congenital dislocation. History of a long and hard labor, version finally being done. Began to walk at fifteen months. One sister also affected with congenital dislocation. Child presented a marked limp. Head a little more anterior than usual, and of good size. Abduction and extension almost normal. Slight lumbar lordosis. One and one quarter inches shortening.

The steps of the operation were the same as in Case I, but the reposition was a little more difficult. Luxation was reduced in $2\frac{1}{4}$ minutes. The Professor announced that he had a fair stability in this case, and turned it over to his assistant in six minutes after the beginning of the operation. Owing to a lame wrist he gave the third case into the charge of his assistant, Dr. Mueller.

Case III., girl, nine years old, left congenital dislocation. She began to walk at eighteen months, presented the usual limp and a moderate amount of lumbar lordosis. The head of the bone was in good condition, and abduction and extension of the limb were both limited. Shortening of $1\frac{1}{4}$ inches was present. The child had been subjected to preliminary extension for two weeks. The reposition took two minutes, and three minutes later the application of the bandage was begun.

While admiring the marvelous dexterity exhibited by Professor Lorenz and his assistant, the impression that the ordinary observer carried away might possibly be that the operation was not difficult of performance, and not until he has himself attempted it will he appreciate the obstacles in the way of a successful performance. Those of us who have done it understand that it requires an exact technic not to be acquired without actual experience.

451 West End Ave.

BOOK REVIEWS.

A TEXT-BOOK OF PATHOLOGY AND PATHOLOGICAL ANATOMY. By Dr. HANS SCHMAUS, Extraordinary Professor and First Assistant in the Pathological Institute, Munich. Translated from the Sixth German Edition by A. E. THAYER, M.D.; Edited by JAMES EWING, M.D., Professor of Pathology in the Cornell University Medical College, New York. Lea Brothers & Co., Philadelphia and New York.

The preface of this work sums up the main features

in this excellent volume so well that the reviewer feels justified in using very largely the editor's language.

"This work," he says, "stands out among the well-known Continental text-books by reason of its original close adaptation to the needs of students and its progressively closer approach to such requirements in each of its rapidly succeeding revisions. The author has not attempted to compete with the more discursive works of his countrymen, but has endeavored to write a shorter, more compact, but equally comprehensive book, embodying all the important principles and facts that should be brought before students of pathology. There is a notable absence in these pages of the argumentative style, the quotation of authorities and the pursuit of personal opinion—instead of such material there is found in this volume a condensed statement of present knowledge, amplified with a rich array of aptly chosen instances and references."

We have found the book all this and more, and in its present exceedingly attractive form it takes its place as a leader among the text-books of modern times.

PHYSICAL DIAGNOSIS, DISEASES OF THE THORACIC AND ABDOMINAL ORGANS. A Manual for Students and Physicians. By EGBERT LE FEVRE, M.D., Professor of Clinical Medicine and Associate Professor of Therapeutics in the University and Bellevue Hospital Medical College; Attending Physician to Bellevue and St. Luke's Hospitals. Lea Brothers & Co., Philadelphia and New York.

THE elicitation and interpretation of physical signs can be learned only by practical experience, but this experience must be founded upon a thorough theoretical knowledge of the causes of the various signs. In a majority of general practitioners there is a lamentable weakness in their ability to diagnose the more obscure conditions of the chest and abdomen. In some this is undoubtedly due to lack of training but it frequently happens that the mistake is made because the importance of a thorough physical examination is not appreciated and lesions are overlooked which would be easily recognized if one's attention was only drawn to them.

The incentive to write the above book was aroused, it seems, by the insistent "why" which students have so frequently asked of the author, and one of the chief values of the book results from the clearness and completeness with which he explains the reasons for the various normal and pathological conditions. The book, in part, is very elementary, to be of assistance to the novice in physical diagnosis, but it also enters into the discussion and explanation of the more obscure points and cannot fail to appeal to any one interested in this important subject. The illustrations are especially clear and instructive.

PRACTICAL DIAGNOSIS: THE USE OF SYMPTOMS AND PHYSICAL SIGNS IN THE DIAGNOSIS OF DISEASE; Fifth Edition, Revised and Enlarged. By HOBART AMORY HARE, M.D., B.Sc. Professor of Therapeutics in the Jefferson Medical College of Philadelphia. Lea Brothers & Co., Philadelphia and New York.

DR. HARE'S Practical Diagnosis has been greatly enlarged and improved in this the fifth edition, bringing it up to the modern standards of technic for all the practical purposes of the average medical men. It is meant for the practitioner and is for its purpose one of the very best of the works on diagnosis.

The illustrative features in this work have been greatly extended making it much more attractive and helpful, especially in the discussion of diseases of the chest.

The cuts illustrating the various nerve lesions are

very admirable, especially the distribution of the various anesthetic consecutive to cutaneous nerve lesions.

In its new dress the work maintains its place as a thoroughly modern and practical book on diagnosis.

THE DISEASES OF INFANCY AND CHILDHOOD. For the use of Students and Practitioners of Medicine. By L. EMMETT HOLT, M.D., LL.D., Professor of Diseases of Children in the College of Physicians and Surgeons. Second Edition. D. Appleton and Company, New York.

A new edition of Dr. Holt's book brings with it the vigor and strength of the original with a complete revision of the entire text, making it thoroughly modern in every respect. The changes within the past five years have not been very extensive, yet the many new facts that have come out in the rapidly advancing science of pediatrics have here all received their share of careful and judicial treatment.

The arrangement of the first edition has been kept, it could hardly have been bettered, and the general text, illustrations and book work stamp the volume as one of the very highest rank.

The extremely practical question of infant-feeding, as is well known, has been a subject of special study by the author and one in which medical advances have been made very largely identified with his name. It is a pleasure to find the subject handled in a text-book in a comprehensive and yet common-sense manner.

A more extended analysis would simply involve the reviewer in a continual use of the superlative, for the original high character of the work has been still further enhanced in its new edition.

THE ROENTGEN RAYS IN MEDICINE AND SURGERY. As an Aid in Diagnosis and as a Therapeutic Agent. By FRANCIS H. WILLIAMS, M.D., Visiting Physician to the Boston City Hospital. Second Edition. The Macmillan Company, New York.

WE had occasion to speak in unmeasured terms of praise for the first edition of this work and the need for a second edition three months from the time of issue of the volume is an evidence that the work has been appreciated by the practitioner.

This second edition contains some 40 new pages most of which have been given up to the description of new apparatus. A further extension of the therapeutic uses of the X-rays is given, making this volume the only one in its class. We know of no work in any language that approaches it in any respect.

A MANUAL OF MEDICAL TREATMENT OF CLINICAL THERAPEUTICS. By I. BURNIE YEO, M.D., F.R.C.P. Emeritus Professor of King's College, London, and Consulting Physician to King's College Hospital, etc. Tenth Edition. W. T. Keener & Company, Chicago.

PROFESSOR BURNIE YEO'S work is too well known to need any special commendation. The best index of the appreciation of the medical profession for the book, is to be seen in the fact that in less than 10 years, 10 editions altogether, 15,000 volumes have been purchased.

Professor Yeo's object, when the work was originally written was the study of disease from the point of view of treatment. Notwithstanding the number of medical text-books on the market and the importance of this department of clinical medicine, less almost had been written about it, than any other. Professor Yeo approached his subject from the side of the disease and not from that of the drug or remedy, which had

been a popular method of writing works on therapeutics, before. The immediate popularity of his book, justified his selection of method. Now at the end of 10 years, during which he has constantly kept the work up to date, this new revised edition, contains in thoroughly sifted form most of what is valuable in recent therapeutic suggestions. Certain new chapters have been added to the work. These are concerned mainly with hay fever, paralysis agitans, cerebral tumors, erysipelas, cerebrospinal fever, rickets, scurvy and purpura.

In the nearly 1,500 pages of the two volumes there is scarcely a medical subject of any interest which is not enriched by many thoroughly valuable therapeutic suggestions. There is very little waste of words and no heaping up of possible remedies from many different sources, but the discussion of the value of a few with the details of their method of application. It is this manner of writing that has made Professor Yeo's books popular and will doubtless insure the popularity of the present edition. Illustrations are so helpful when methods are new that the reviewer is almost tempted to wonder why a few illustrations were not introduced into this work. The difficulty of course is that already the volumes are large enough for their purpose and illustrations might make them cumbersome, but we think that some of the text might have been spared for the sake of the illustration auxiliaries.

DISEASES OF THE INTESTINES, Their Special Pathology, Diagnosis and Treatment. By JOHN C. HEMMETER, M.D., Ph.D., Professor in the Medical Department of the University of Maryland. Vol. II. P. Blakiston's Son & Co., Philadelphia.

We have reviewed the first volume of this work of Dr. Hemmeter's saying that it stands out almost alone in its field and so far as we are aware it is the best thing of its kind in the medical literature of the subject.

This second volume amply fulfills the promise of the first. Because of the peculiarly wide scope of the contents we feel justified in touching upon the topics. These are Appendicitis, Tuberculosis, Syphilis, Actinomycosis of the Intestine, Occlusions, Contusions, Ruptures, Enterorrhagia, Intestinal Surgery, Atrophy, Abnormalities of Form and Position, Thrombosis, Embolism, Amyrdosis, Neuroses of the Intestine, Intestinal Parasites, Diseases of the Rectum. This last chapter is from the pen of Dr. Thos. Chas. Martin, of Cleveland, and constitutes a worthy addition to a most excellent treatise.

We have no opportunity to critically analyze the various chapters. They are, in short, full, accurate and thoroughly trustworthy. They could not be otherwise, coming from such an authority. The chapter on Intestinal Parasites in particular is the best we know in any text-book.

The publishers are to be congratulated on the choice of illustrative material and on the mechanical execution.

TEXT-BOOK OF PHYSIOLOGICAL AND PATHOLOGICAL CHEMISTRY. By G. BUNGE, Professor of Physiological Chemistry at Bâle. Second English Edition. Translated from the Fourth German Edition by FLORENCE A. STARLING and Edited by ERNEST H. STARLING, M.D., Professor of Physiology in University College, London. P. Blakiston's Son & Co., Philadelphia.

As a foremost exponent of the school of vital physiology the writings of Bunge have always claimed and obtained a wide acceptance. Their English dress is then the more acceptable since the original German is denied so many of our medical students.

The fashion of translation is, we believe, a good one; not that intrinsic facts cannot be stated by one writer as well as another, but behind and beyond the array of truths found in a text-book there is a living author, and when such an author occupies the rank and position of the present one the student gets more than mere facts.

The present edition is to be commended very highly from the translation standpoint. It has been well done and the author's thought has been well presented. Further than this the scope of the author's work is such that no thinking student can study such a treatise without a feeling of great stimulation to test and "prove all things."

The work is of the kind which we specially desire to commend. It is not a hack treatise filling so many pages but a book full of meat.

TRAITÉ DE MÉDECINE ET DE THÉRAPEUTIQUE. Par P. BROUARDEL, Professeur à la Faculté de médecine de Paris, et A. GILBERT, Professeur de thérapeutique à la Faculté de médecine de Paris. Tome Dixième. MALADIES DES NERFS PÉRIPHÉRIQUES, NÉVROSES, MALADIES DES MUSCLES. Par M. M. PITRES, VAILLARD, GILLES DE LA TOURETTE, GASNE, GRASSET, RAUZIER, TRIBOULET, LANNOIS, LAMY, SAINTON, BRISSAUD ET MARINESCO. J. B. Baillière et Fils, Paris.

THE appearance of the tenth volume of Brouardel's and Gilbert's *Traité de Médecine* closes this most noteworthy series of volumes. As one of the most recent treatises on the general subject of medicine it is also one of the clearest, most comprehensive and best. While it lacks the monographic completeness of a recent German contemporary it covers the field of practical medicine most commendably. This volume also concludes the study of the diseases of the nervous system and also takes up diseases of the muscles.

The names of the authors are a sufficient guarantee that one will find a thoroughly modern treatment of the various sections.

Pitres, Professor of the Faculty of Medicine of Bordeaux, has written the chapter on Diseases of the Peripheral Nerves in collaboration with Vaillard of Val de Grace. It is a singularly lucid and suggestive chapter.

Hysteria and Hypnotism are discussed by Gilles de la Tourette and Gasner; the Tics by Dr. Triboulet, Grasset and Rauzier, Professors in the University of Montpellier have contributed chapters on Epilepsy; Eclampsia of Infants (Infantile Convulsions, Tetany and allied states) is by M. Lamy. Brissaud has taken up Neurasthenia, Migraine and Ophthalmic Migraine, while Marinesco has contributed the chapters on the Myosites and the Myopathies.

The French school have been so active in the elucidation of just this class of maladies that their discussion in a book of this character is greatly welcomed.

The features which have rendered the French teachings so valuable, namely their comprehensiveness and their arrangement, are found in this volume in marked degree. It makes a splendid ending of a grand undertaking.

DICTIONARY OF PHILOSOPHY AND PSYCHOLOGY. Written by many hands and edited by JAMES MARK BALDWIN, Ph.D., Hon. D.Sc., Hon. LL.D., Stuart Professor in Princeton University. Vol. II. The Macmillan Company, New York.

THIS second volume completes the dictionary proper, the third volume being reserved for the historical and biographical sketches. It is truly a fine performance, and as we have already expressed ourselves, the medi-

cal practitioner can profit from the work fully as much as the philosopher or psychologist.

In a true sense the student of medical problems is a philosopher and given the proper understructure, his life-work can engender a philosophy that is sound and useful. Such a work as this is invaluable in showing him very quickly what the great thinkers of the world have thought on the broadest of life's problems, and the small ones as well. This facility of reference, combined with accuracy of statement makes the work particularly commendable. It will remain a classic for many many years; indeed we do not see that it can ever outgrow a certain very wide and deep usefulness, not only for the student of these special lines but for the thinking man, technical or lay. We can most heartily commend it to our readers.

CLINICAL METHODS. A GUIDE TO THE PRACTICAL STUDY OF MEDICINE. By ROBERT HUTCHISON, M.D., M.R.C.P., Assistant Physician to the London Hospital for Sick Children, Great Ormond Street, and HARRY RAINY, M.A., F.R.C.P., Eng., F.R.S.E., University Tutor in Clinical Medicine, Royal Infirmary, Edinburgh. Fifth Edition. W. T. Keener & Company, Chicago.

THIS little work, over 8,000 copies of which have been sold since September, 1897, is a typical English manual. To say that means that it is eminently practical, that it is conservative, that it is complete, and that it is really handy. It contains in brief, an immense amount of very useful information. It is not ambitious looking, yet many text-books of larger size do not contain anything like the same amount of information. Perhaps there is a tendency noticeable in the book to make certain very recent medical advances, especially new methods of diagnosis, appear almost too easy. There are many bits of technic, readily intelligible once the reader has seen the method carried out in actual practice that yet are very hard to grasp from a mere printed description, even when illustrations are added. The illustrations, while mainly diagrammatic, always convey accessory information of value. The book will prove of great assistance to American practitioners.

PRACTICAL DIETETICS. WITH SPECIAL REFERENCE TO DIET IN DISEASE. By W. GILMAN THOMPSON, M.D., Professor of Medicine in the Cornell University Medical College in New York City. Second Edition. D. Appleton & Company, New York.

THOMPSON's dietetics was in sore need of a thorough revision, for, while it was a large volume it was a most indigestible one and for a writer on dietetics to serve such a conglomeration of facts, fancies and fallacies was adding insult to injury.

We are glad to note, however, that the facts have been largely augmented in the present volume—many of the fancies still remain and give the work what semblance of individuality it possesses and most of the fallacies have been eliminated.

The work is really a very excellent one and is marred only by its too great leaning on statistical facts, the relation of which is in many instances lost. The first table that caught the reviewer's eye was that of König's on mushrooms. König is of course the main prop of all modern writers on dietetics when they would seek their chemical underpinning, but one must know about variations and different varieties of plants and animals or else König's figures are sadly misinterpreted. The author's statement about truffles being a vegetable is interesting and his characterization of poisonous fungi as being warty is more than amusing; it is farcical.

There are but few of these antiquities in the book however—they are but moles, for the work as a whole is both sound and satisfactory.

In the early chapters the reviewer would like to see a fuller discussion of the relation of water and the inorganic salts and to dissociation of the active ions and their action on the body tissues, a field frequently that has great practical relations to the subject of practical dietetics, especially in the treatment of some of the disordered metabolisms; Arthritis deformans, gout, diabetes, etc., in which latter subjects much of the old time empiricism is here preserved.

We can most cordially commend the work to our readers as practical and sound and would like to see it, in a future edition, brought into line with our most advanced knowledge of physiological chemistry. It would then be the superior of any of its class in the market.

ANATOMICAL RESEARCHES ON THE SO-CALLED "PROSTATIC HYPERTROPHY" AND ALLIED PROCESSES IN THE BLADDER AND KIDNEYS. By STANISLAUS CIECHANOWSKI, Assistant Professor of Pathological Anatomy, University of Krakau, Austria. Edited by ROBERT HOLMES GREENE, A.M., M.D., Surgeon to the French Hospital, etc. E. R. Pelton, New York.

THE author's main thesis shows that much of the bladder trouble of men, and women as well, is not necessarily the result of an hypertrophied prostate, for many old men do not have hypertrophied prostates and further many hypertrophied prostates do not cause any special urinary disturbances. The general factors of arterio-sclerosis are of more importance in the effects of the process on muscular disintegration than is an enlarged prostate.

The author then reviews from a rich pathological experience the various factors concerned in the development of the senile bladder.

Dr. Greene has made a very readable translation of this intricate and yet very important topic and this small brochure can be most heartily endorsed as giving the latest results of research on this subject.

MANUAL OF GYNECOLOGY. By Henry T. Byford, Professor of Gynecology and Clinical Gynecology in the College of Physicians and Surgeons of Chicago; Professor of Gynecology in the Post-Graduate Medical School of Chicago and in the Chicago Clinical School, etc. Third Revised Edition. P. Blakiston's Son & Co., Philadelphia.

THE well-deserved success with which the two former editions of this book have met, justify the preparation of this third edition. The merits of the book are so well known that it would seem but idle waste of time and ink to repeat them.

The general plan of the volume has been changed for the better. Anatomy, physiology and the general considerations of the diagnosis and treatment of gynecology have been brought to the front of the book and put in with the Introduction.

The marginal notes make it possible to see at a glance the contents of a paragraph, and thus render easy the reference to a desired subject. These marginal notes are very clear and terse, and are excellently arranged.

As a manual the book is a success; it complies with all the requirements of such a volume, and does it in a clear and concise manner. We recommend it to the general practitioner as such, with the assurance that it will satisfy the demands made of it. The illustrations are not lavish in number, but are sufficient for the needs of the text.